S
388.1
H3eis
85-01-D
1985

FHWA-MT-EIS-85-01-D

# I-15 BELTVIEW INTERCHANGE

## HELENA, MONTANA

PLEASE RETURN

## DRAFT

STATE DOCUMENTS COLLECTION

AUG 12 1986

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

# ENVIRONMENTAL IMPACT STATEMENT

STATE OF MONTANA
DEPARTMENT OF HIGHWAYS

AND

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

AUG 7 - 1991
OCT 27 1997

MONTANA STATE LIBRARY
S 388.1 H3eis 85-01-D 1985 c.1
Project no. IR 15-4(63)191, Interstate 1
3 0864 00053729 3

NRIS 324

FHWA-MT-EIS-85-01-D

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

PROJECT NO. IR 15-4(63)191, INTERSTATE 15
BELTVIEW INTERCHANGE

# DRAFT ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration

and

State of Montana
Department of Highways

Submitted pursuant to 42 U.S.C. 4332(2)(c)

12/6/85
Date

Roger K. Scott
for Federal Highway Administration

12-6-85
Date

Gary J. Wiens
for Montana Department of Highways

TO ALL INTERESTED GOVERNMENT AGENCIES
AND THE PUBLIC

The enclosed Draft Environmental Impact Statement (DEIS) for the Beltview Interchange Project, IR 15-4(63) 191, is submitted for your review in accordance with the National Environmental Policy Act of 1969. This D.E.I.S. documents the extensive studies that have occurred during the development of this project. Every effort has been made to expedite the preparation of the environmental document. Consequently, it is imperative that the Montana Department of Highways receive your comments before February 3, 1986. All comment should be sent to:

Stephen C. Kologi, Chief
Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, MT 59620
Phone: (406) 444-6242

1202cov.not

## ADDITIONAL INFORMATION

The following persons may be contacted for additional information concerning this document:

Stephen C. Kologi
Chief, Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, MT 59620
(406) 444-6242

William S. Dunbar
Project Development Engineer
Federal Highway Administration
301 South Park, Drawer 10056
Helena, Mt 59626
(406) 449-5310

## ABSTRACT OF E.I.S.

This draft environmental impact statement is an examination of the proposed construction of the Beltview Interchange on Interstate Highway 15, near the extension of the existing Beltview Drive southeast of Helena, Montana. The project will include a crossing structure over the interstate highway with connecting ramps to the existing interstate highway and a connecting street to the existing Colonial Drive. Other possible future connections to the Helena and Helena area street and road system are also discussed. The document discusses the purpose and need, the alternatives, the affected environment, the environmental consequences, mitigations measures and comments and coordination. Also included are a list of preparers and the D.E.I.S. circulation list.

## COMMENTS

Comments on this draft Environmental Impact Statement are due by 03 February 1986 and should be sent to Mr. Stephen Kologi at the above address.

Digitized by the Internet Archive
in 2012 with funding from
Montana State Library

http://archive.org/details/projectnoir154630193mont

# TABLE OF CONTENTS


1. SUMMARY....1
   1.1. PROJECT DESCRIPTION....1
   1.2. ALTERNATIVES CONSIDERED....1
   1.3. PREFERRED ALTERNATIVE....1
   1.4. PROJECT CONSTRUCTION....1
   1.5. SIGNIFICANT ENVIRONMENTAL ISSUES....2
   1.6. PERMITS AND LICENSES REQUIRED....2
   1.7. REFERENCES FOR CHAPTER 1....3

2. PURPOSE AND NEED....4
   2.1. PROJECT DESCRIPTION....4
   2.2. PROJECT HISTORY....4
   2.3. NEED....7
   2.4. LOGICAL TERMINI/INDEPENDENT UTILITY....7
   2.5. REFERENCES FOR CHAPTER 2....9

3. ALTERNATIVES....10
   3.1. MEETINGS TO DISCUSS ALTERNATIVES....10
   3.2. ALTERNATIVES SELECTED FOR EVALUATION....10
   3.3. EVALUATION OF ALTERNATIVES....12
      3.3.1. Socioeconomic Impacts....12
         3.3.1.1. Population Impacts....12
         3.3.1.2. Economic Impacts....12
         3.3.1.3. Property Values....13
         3.3.1.4. Property Tax Impacts....13
      3.3.2. Public Utilities....13
      3.3.3. Flood Hazard/Storm Drainage....13
      3.3.4. Wetlands/Flood Plain....13
      3.3.5. Relocations....14
      3.3.6. Air Quality....14
      3.3.7. Water Quality....14
      3.3.8. Noise....14
      3.3.9. Visual....14
      3.3.10. Natural Resources....14
      3.3.11. Land Use Impacts....15
      3.3.12. Historic/Cultural/Archaeological Sites....15
      3.3.13. Traffic and Safety....15
      3.3.14. Agriculture and Irrigation....16
      3.3.15. Energy....17
      3.3.16. Construction Impacts....17
      3.3.17. Related Street Construction....17
      3.3.18. Costs....18
   3.4. PREFERRED ALTERNATIVE....18
   3.5. REFERENCES FOR CHAPTER 3....19

4. AFFECTED ENVIRONMENT....20
   4.1. SOCIOECONOMIC BASELINE CHARACTERISTICS....20
      4.1.1. Population Characteristics....20
      4.1.2. Economy....22
      4.1.3. Housing Characteristics....27
      4.1.4. Demographic and Social Characteristics....29
      4.1.5. Tax Base Characteristics....30
      4.1.6. Public and Private Service Characteristics....30
   4.2. PUBLIC UTILITIES....32
      4.2.1. Sewer and Water....32

5.10.1. Vegetation....76
5.10.2. Wildlife....76
5.11. LAND USE IMPACTS....77
5.12. HISTORIC/CULTURAL/ARCHAEOLOGICAL SITES....80
5.13. TRAFFIC AND SAFETY....81
5.13.1. Future Traffic Volumes....81
5.13.2. Bicycle/Pedestrian Traffic....86
5.13.3. Traffic Safety....86
5.14. AGRICULTURE AND IRRIGATION....87
5.15. CONSTRUCTION IMPACTS....87
5.15.1. Noise....87
5.15.2. Air Quality....87
5.15.3. Borrow and Waste Areas....88
5.15.4. Vehicle and Pedestrian Traffic....88
5.16. RELATED STREET CONSTRUCTION....88
5.17. ENERGY....90
5.18. COSTS....90
5.18.1. Administration and Engineering....90
5.18.2. Right-of-Way....91
5.18.3. Construction Costs....91
5.18.4. Funding Sources....91
5.19. REFERENCES FOR CHAPTER 5....93

6. MITIGATION MEASURES....96
6.1. NATURAL RESOURCES....96
6.1.1. Vegetation....96
6.1.2. Wildlife....96
6.2. LAND USE....96
6.3. HISTORICAL/CULTURAL/ARCHAEOLOGICAL....96
6.4. TRAFFIC AND SAFETY....96
6.5. CONSTRUCTION....97
6.5.1. Air Quality....97
6.5.2. Borrow and Waste Areas....97
6.5.3. Vehicle and Pedestrian Traffic....97
6.6. REFERENCES FOR CHAPTER 6....98

7. COMMENTS AND COORDINATION....99
7.1. SCOPING AND IDENTIFICATION OF SIGNIFICANT ISSUES....99
7.2. REFERENCES FOR CHAPTER 7....101

8. LIST OF PREPARERS....102

9. D.E.I.S. CIRCULATION LIST....103

INDEX....108

# LIST OF FIGURES

2-1: Vicinity Map.....5
2-2: Beltview Interchange & Connecting Streets.....6

3-1: Beltview Interchange Typical Sections.....11

4-1: Helena and East Helena Air Quality Monitoring Sites.....34
4-2: Noise Test Locations.....40
4-3: Annual Variation in Traffic Volumes.....46
4-4: Monthly Variation in Traffic Volumes.....48
4-5: Hourly Variation in Traffic Volumes.....48
4-6: Existing Traffic Volumes.....49

5-1: Development Plan - the Diehl Company.....78
5-2: Development Plan - G.W. Padbury Property.....79
5-3: Year 2006 ADT Without Beltview Interchange.....82
5-4: Year 2006 ADT With Beltview Interchange.....83
5-5: Year 2006 Net Effects on Major Street Network.....84
5-6: S.I.D. Assessment Plan - Southeast Helena.....92

# LIST OF TABLES

3-1: Streets with Increased Traffic.....16
3-2: Streets with Decreased Traffic.....16

4-1: Population Trends.....20
4-2: Estimated Population Change.....21
4-3: Estimated Population Change*.....22
4-4: Historic Employment.....23
4-5: State and Federal Government Employment.....23
4-6: Average Annual Unemployment Rates.....24
4-7: Economic Indicators.....25
4-8: Major Employers.....25
4-9: Retail Trade Characteristics.....26
4-10: Service Industry Characteristics.....26
4-11: Total Dwelling Units.....27
4-12: Estimated New Dwelling Units.....28
4-13: Estimated New Housing .....29
4-14: Estimated New Housing.....29
4-15: Historic School Enrollment.....31
4-16: Maximum Observed Total Suspended Particulate Concentrat.37
4-17: Noise Abatement Criteria(17).....39
4-18: Present Noise Levels (July, 1985).....41

5-1: Population Forecasts Helena Urban Area.....54
5-2: Population Forecasts Helena Area.....55
5-3: Population Forecast Southeast Helena.....55
5-4: Estimated Local Income Effects.....58
5-5: Projected Retail Sales and Establishments with Payrolls..61
5-6: Predicted Noise Levels (dBA).....75
5-7: Administration and Engineering Costs.....90

# 1. SUMMARY

## 1.1. PROJECT DESCRIPTION

This draft environmental impact statement is an examination of the proposed construction of the Beltview Interchange on Interstate Highway 15, near the extension of the existing Beltview Drive southeast of Helena, Montana. The project will include a crossing structure over the interstate highway with connecting ramps to the existing interstate highway and a connecting street to the existing Colonial Drive. Other possible future connections to the Helena and Helena area street and road system are also discussed.

## 1.2. ALTERNATIVES CONSIDERED

Significant study and analysis has been conducted to select the most viable alternatives for consideration in the environmental impact statement. In addition, several previous studies and reports have been prepared recommending alternatives including the I-15 Corridor Study (1) and the Helena Transportation Plan, 1981 Update (2). Also, as part of the scoping process, a meeting was advertised and held 04 April 1985 to encourage and receive public comment and recommendations on alternatives (3). As a result, the following alternatives were selected for evaluation in this document:

The Beltview Interchange Alternative, as shown on Figures 2-1 and 2-2, located approximately one mile southeast of the existing Capitol Interchange.

The No-Build Alternative

## 1.3. PREFERRED ALTERNATIVE

Based on the analysis, information and studies available to-date and on public scoping meetings held, the alternative preferred by the Montana Department of Highways and the Federal Highway Administration is the Beltview Interchange Alternative. Final selection of an alternative, however, will not be made until the results of the circulation of this environmental impact statement and the public involvement process have been fully evaluated.

## 1.4. PROJECT CONSTRUCTION

If the Beltview Interchange Alternative is selected as the preferred alternative, it is planned that construction will begin and be completed in 1986 at a cost, including the cost of environmental studies, design, S.I.D. administration and construction, of approximately $1,776,000 (Section 5.16). The entire cost of the project, including administrative and construction supervision costs incurred by the Montana Department of Highways will be paid through a special improvement district administered by the City of Helena and including approximately 121 acres of commercial land planned adjacent to the interchange and the interstate. Right-of-way will be donated by the property owners.

## 1.5. SIGNIFICANT ENVIRONMENTAL ISSUES

The significant environmental issues which may result from the construction of the interchange are the following:

a. The interchange could influence patterns of commercial and residential development in the project area by encouraging economic activities near the interchange that would otherwise not occur (Section 5.1.2).

b. The interchange could cause a significant shift in traffic patterns in the project area. There could be a significant increase in traffic on the existing interstate highway (which is designed to carry much more traffic than it does now) and an increase on Broadway and Winne Avenues. Traffic could decrease on other streets in the area, particularly, California Street, Colonial Drive and the Prospect/Eleventh Avenue Couplet (Section 5.13). To the extent that the presence of the interchange would cause an increase or decrease in traffic on residential streets, the project would contribute incrementally to changes in traffic related social and property value impacts in residential areas of southeastern Helena.

c. Property values could increase on commercial land adjacent to the interchange (Section 5.1.5).

d. Approximately 121 acres of commercial land near the interchange is planned to be assessed, through a special improvement district administered by the City of Helena, to pay for the planning, design and construction of the project (Section 5.1.6 and 5.18).

e. The construction of the interchange would make it possible, using the interchange bridge as an overpass, to construct a connecting street from the southeast Helena area to U.S. Highway 12. Related traffic shifts are discussed in Section 5.13.

Issue b., above, which includes the shift in traffic patterns resulting from construction of the interchange, is an important issue. Residents and property owners are concerned about the effects the interchange will have on traffic volumes in residential areas along and near the east end of Broadway and Winne Avenues.

## 1.6. PERMITS AND LICENSES REQUIRED

In response to an application from the Montana Department of Highways, additional access on I-15 at the proposed Beltview Interchange site was approved by the Federal Highway Administration on 05 February 1985 subject to compliance with applicable Federal requirements.

## 1.7. REFERENCES FOR CHAPTER 1

Copies of all references listed below are available for inspection at the offices of Morrison-Maierle, Inc., 910 Helena Avenue, Helena, Montana 59601.


1. Henningson, Durham & Richardson, Inc., A Study of the I-15 Corridor in the Vicinity of Helena, Montana, 1980

2. Robert Peccia & Associates, Helena Transportation Plan, 1981 Update, 1982

3. Morrison-Maierle, Inc., Technical Memorandum #3, Meeting to Discuss Alternatives for the Beltview Interchange, 1985

4. Winterburn, Rosana, President, Board of Trustees, St. Peters Community Hospital, letter dated June 4, 1985.

## 2. PURPOSE AND NEED

### 2.1. PROJECT DESCRIPTION

The project will include the construction of a diamond-type interchange on Interstate Highway 15 southeast of Helena, Montana near an extension of the existing Beltview Drive. Beltview Drive is a two lane urban street within the City of Helena and is not on a federal aid route. It currently ends at Saddle Drive on the eastern edge of Helena. Interstate 15, with two northbound and two southbound lanes, passes along the eastern edge of the City of Helena with two existing interchanges providing access. Figures 2-1 and 2-2 show the location of the Capitol Interchange and the proposed Beltview Interchange, approximately one mile southeast.

### 2.2. PROJECT HISTORY

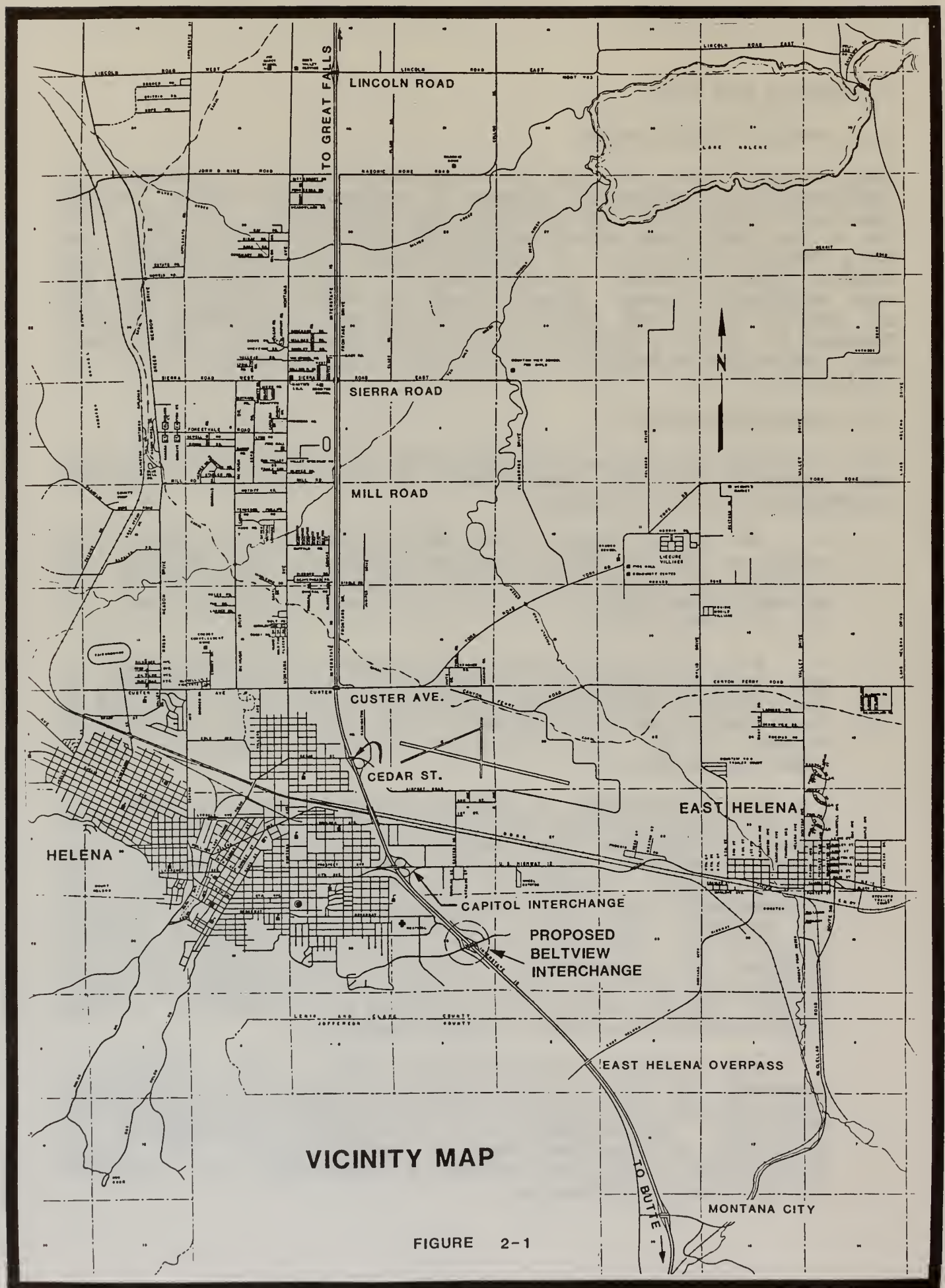
The following factors were instrumental in initiating the project and bringing project development to the point of requiring preparation of this document:

- In 1972, during the development of the East Park Addition to the City of Helena located in SE Helena, the limited access to the area was recognized and the need for an additional access to I-15 was discussed by developers and the City of Helena.

- In 1978, a proposal to construct a shopping center in the area now occupied by the bowling alley was delayed by the City of Helena largely because of the limited access to the area on existing streets. An interchange to provide access to the area from I-15 was again recognized as a possible solution.

- The Interstate 15 Corridor Study(1) was completed for the Montana Department of Highways in September 1980. This report recognized the relatively low use of I-15 as it passes through the Helena area, recognized the existing and future traffic congestion problems on local streets and recommended additional interchanges and other improvements to increase use of the interstate and relieve traffic problems on some city streets. The report recommended a package of improvements including the addition of one interchange north of Custer Avenue, an interchange at Custer Avenue and the Beltview Interchange to provide the optimum transportation benefits to the community.

- The Helena Transportation Plan, 1981 Update(2), prepared for the City of Helena and Lewis and Clark County, also examined the existing Helena transportation network and committed improvements and recommended improvements to alleviate problems and improve traffic flow. The report recommended additional access to Interstate 15, including the Beltview Interchange.




# VICINITY MAP

FIGURE 2-1

**BELTVIEW INTERCHANGE & CONNECTING STREETS**

FIGURE 2-2

- In 1985, recognizing the need for additional I-15 access in the southeast area of Helena, one of the major property owners in the area agreed to help finance the design and construction of the proposed interchange through the creation of a special improvement district and signed a "Memorandum of Understanding" with the Montana Department of Highways (3). The memorandum outlines the facts and assumptions, the steps to be taken, the areas of responsibility and the coordination required to accomplish the task of constructing the interchange.

- A letter of intent describing the proposed interchange project was sent to interested agencies and individuals and three public scoping meetings were held to explain the project and solicit comments and suggestions from the public and interested government agencies (See Chapter 7.).

## 2.3. NEED

An interchange constructed in this area will serve the following purposes:

1. Provide access to developed and developing areas in the southeastern area of the City of Helena. Existing development in the area includes St. Peter's Community Hospital, doctors, dentists, a rest home, other health care organizations, a bowling alley and a car wash. Development planned for the near future includes a 150 room motel/convention center. Approximately 100 acres adjacent to the interchange are being zoned for commercial development.

2. Allow more use of Interstate 15 in the Helena area. As indicated in the Interstate 15 Corridor Study (1) and the Helena Transportation Plan, 1981 Update (2), additional access to the interstate highway in this area and in the area north of Helena will provide for more use of the currently lightly used interstate highway and will reduce traffic on some heavily used city streets.

3. The interchange bridge over the 4-lane interstate highway can also be used, if a connecting street is constructed, by traffic traveling from the southeast Helena area to Highway 12. This important link was recommended by the Helena Transportation Plan Update, 1981(2).

4. Provide a pedestrian crossing.

## 2.4. LOGICAL TERMINI/INDEPENDENT UTILITY

This project connects logical termini and, with the connecting streets, is of sufficient length to address environmental matters on a broad scope. The project is in accordance with and part of the recommendations of the Helena Transportation Plan Update, 1981(2)

The project has independent utility and independent significance and will be useable and reasonable even if no additional transportation improvements in the area are accomplished. A connection to Colonial Drive will be constructed with the interchange. The interchange will provide access to developing areas adjacent to the interstate highway in the project area.

The project will not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. The East Helena Overpass Alternative, discussed in Section 3.2 ALTERNATIVES SELECTED FOR EVALUATION, can be constructed regardless of whether or not the Beltview Interchange Alternative is constructed.

## 2.5. REFERENCES FOR CHAPTER 2

Copies of all references listed below are available for inspection at the offices of Morrison-Maierle, Inc., 910 Helena Avenue, Helena, Montana 59601.


1. Henningson, Durham & Richardson, Inc., A Study of the I-15 Corridor in the Vicinity of Helena, Montana, 1980

2. Robert Peccia & Associates, Helena Transportation Plan, 1981 Update, 1982

3. Montana Department of Highways and the Diehl Company, Memorandum of Understanding, 1984

# 3. ALTERNATIVES

## 3.1. MEETINGS TO DISCUSS ALTERNATIVES

As indicated in Section 7.2 SCOPING AND IDENTIFICATION OF SIGNIFICANT ISSUES, a meeting and workshop were held specifically to discuss the viable alternatives for construction of the proposed interchange. The two alternatives which had been developed at that time, the Beltview Interchange Alternative and the No-Build Alternative were explained and discussed. In addition, the possibility of constructing an interchange at the existing "East Helena Overpass", approximately 2.5 miles southeast of the Capitol Interchange and 1.5 miles southeast of the Beltview location was mentioned and discussed briefly. There was no large amount of public support for or against the East Helena Overpass location.

## 3.2. ALTERNATIVES SELECTED FOR EVALUATION

Based on the scoping meeting mentioned above, on a review of the several reports and studies completed previously and on analysis of the information gathered and studies completed to-date, the following alternatives have been selected for inclusion in this document:

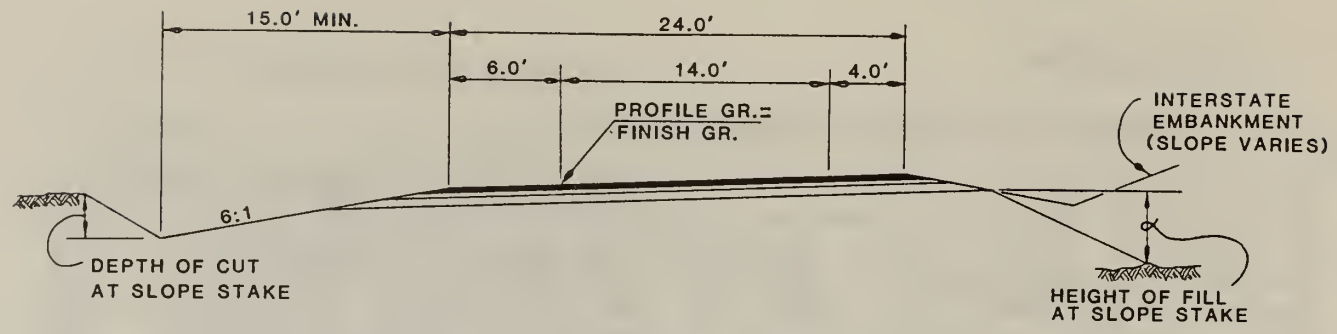
1. Beltview Interchange Alternative, at the location shown on Figures 2-1 and 2-2, would include a diamond type interchange with a bridge structure to carry local traffic over the interstate lanes. Traffic projections indicate that by the year 2006, traffic signals will be required at the intersection of the ramp terminals and Beltview Drive and at the intersection of Beltview Drive and Colonial Drive. Several special turning lanes may be required by the year 2006 including left turn bays extending onto the interchange bridge. Figure 3-1 shows the proposed typical sections of the bridge, crossroad and ramps to be constructed with this project. The interchange will be designed to allow the extension of left turn bays onto the bridge and so that traffic signals and additional lanes on ramps and approach roads can be added as traffic volumes warrant.

2. No-Build Alternative

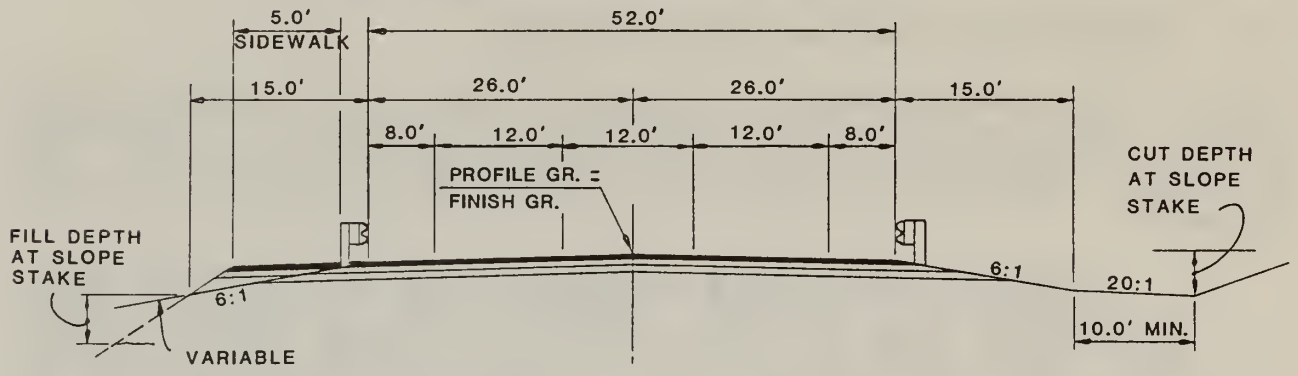
The East Helena Overpass Alternative was investigated, traffic analysis and other studies were completed and the alternative was discussed at the various scoping meetings, but the alternative was not selected for complete evaluation in this environmental impact statement for the following reasons:

1. Property owners adjacent to the Beltview Alternative have agreed to support the creation of a special improvement district to fund the interchange in this location because it will be beneficial to commercial property in the area. The property owners adjacent to the East Helena Overpass Alternative do not feel the commercial benefit of an

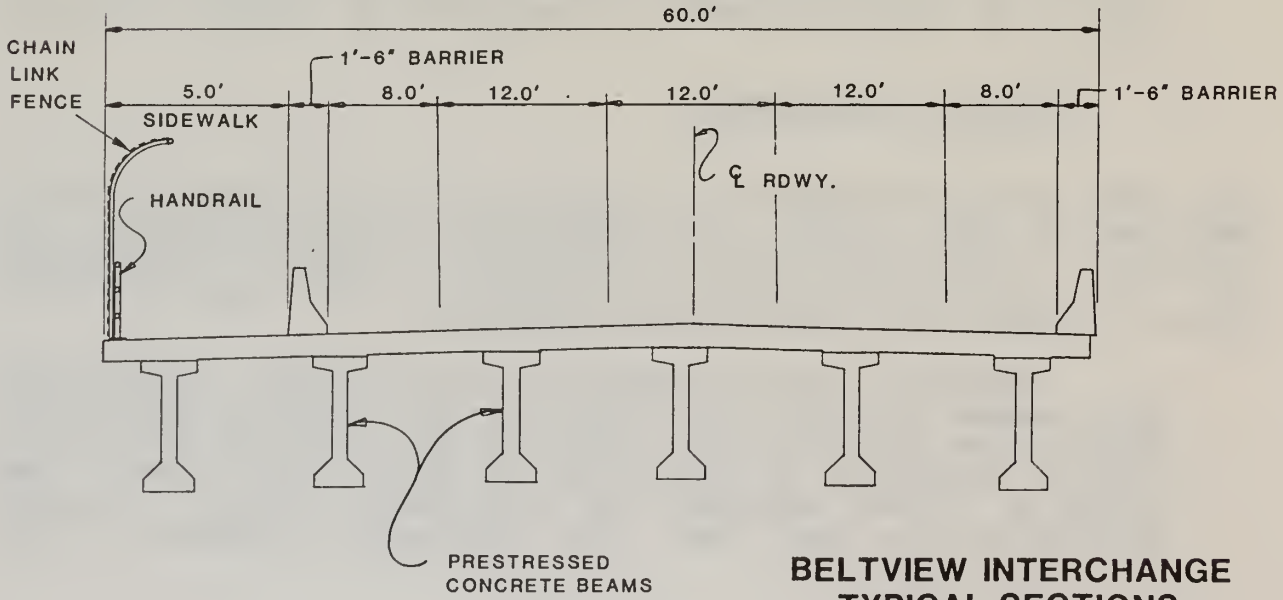
## TYPICAL RAMP SECTION




## TYPICAL SECTION-CROSSROAD




## TYPICAL BRIDGE SECTION




**BELTVIEW INTERCHANGE**
**TYPICAL SECTIONS**

FIGURE 3-1

additional access to the interstate in this area will be significant enough to justify their financial support. Should this alternative be selected for construction, the effect would be the same as selecting the No-Build Alternative since there are no known funding sources available.

2. Traffic analysis and projections indicate an interchange in this area would recieve much less use than an interchange at the Beltview location.

3. This alternative is located in a rural area with little existing development and no significant development planned for the near future. However, should an interchange be constructed at the Beltview location, it would not preclude the construction of an interchange here in the future, should the need arise.

4. There would be no significant benefit to pedestrian traffic as there would be for the Beltview Alternative.

5. The East Helena Overpass Alternative is located too far (approximately 2.5 miles) from the City of Helena and too near the existing Montana City Interchange (approximately 1.5 miles) to significantly help encourage traffic to use the interstate highway more and local and city streets less.

6. The alternative would not provide a crossing to help provide access from the Southeast Helena area to Highway 12 as the Beltview Interchange Alternative would.

7. The East Helena Overpass Alternative would not significantly improve the access to the developing Southeast Helena area as would the Beltview Interchange Alternative.

## 3.3. EVALUATION OF ALTERNATIVES

The following sections present the environmental impacts of the proposed action and the alternatives (the Beltview Interchange Alternative and the No-Build Alternative) in comparative form based on information and analysis presented in Chapters 4. AFFECTED ENVIRONMENT and 5. ENVIRONMENTAL CONSEQUENCES.

### 3.3.1. Socioeconomic Impacts

#### 3.3.1.1. Population Impacts

The area population is expected to grow steadily through the end of the century. Construction of the interchange could also influence the long-term distribution of population in the urban area by improving access to and from land in the southeast Helena area. (See Section 5.1.1.)

#### 3.3.1.2. Economic Impacts

Approximately 50 acres east of the interstate and 50 acres west of the interstate near the proposed Beltview Interchange are

planned for commercial development if the interchange is constructed (See Section 5.11 LAND USE IMPACTS). Without an interchange, the area likely would not be able to support significant commercial development for many years.

3.3.1.3. Property Values

Property values of commercial land adjacent to the proposed Beltview Interchange are expected to increase if the interchange is constructed.

The interchange could have a slight negative effect on residential property values on streets where traffic will increase as a result of the interchange. It could have a slight positive effect on residential property values on streets where traffic is expected to decrease as a result of the interchange.

3.3.1.4. Property Tax Impacts

The interchange will be financed through the creation of a special improvement district (S.I.D.) to include approximately 50 acres of commercial land east of the interstate and 71 acres of commercial land west of the interstate (boundaries of the S.I.D. are shown on Figure 5-6). No residential property would be assessed.

3.3.2. Public Utilities

Neither the Beltview Interchange Alternative nor the No-Build Alternative will have a significant effect on sewer, water, gas, electricity, telephone or other utilities in the area. Development which occurs with or without construction of the interchange will be the responsibility of and paid for by the developers (See Section 5.2).

3.3.3. Flood Hazard/Storm Drainage

Impacts resulting from increased runoff due to replacement of vegetative cover with less pervious surfaces such as roofs and paved streets will be mitigated by proper planning and design. Retention/detention basins should be constructed to maintain flooding peaks at historical levels and for sediment deposition.

Mitigation measures required will be more extensive for the Beltview Interchange Alternative than for the No-Build Alternative because of the difference in commercial development which will occur which normally produces more impervious areas and therefore greater potential increases in run-off peaks.

3.3.4. Wetlands/Flood Plain

No wetlands or flood plains are located within or near the project area and no impacts are expected with either alternative.

### 3.3.5. Relocations

There will be no relocations of homes or businesses required for either alternative.

### 3.3.6. Air Quality

The project is in an air quality attainment area where the State Implementation Plan (SIP) does not contain transportation control measures.

The direct impact of construction the Beltview Interchange Alternative will be an increase in carbon monoxide (CO) and total suspended particulates (TSP) in the immediate area of the interchange.

The indirect impact of building the Beltview Interchange Alternative would be a decrease in both the CO and the TSP concentrations along much of the major street network in southeast Helena. The more desirable access routes provided by the interchange will remove some of the traffic from the major street network and thereby reduce concentrations of pollutants along the network.

### 3.3.7. Water Quality

Neither alternative will have an effect on water quality.

### 3.3.8. Noise

Neither alternative will have a significant effect on noise in established residential areas nor on existing hospitals and schools.

Noise will increase with the Beltview Interchange Alternative where new streets are to be constructed, for example, the connection to Colonial Drive and the extension of Beltview Drive northeast to connect with Highway 12. Noise will not exceed acceptable levels as defined by federal noise abatement criteria.(See Section 5.7)

### 3.3.9. Visual

Since the project lies adjacent to existing urban areas and on an existing 4-lane interstate highway, no significant adverse impacts on visual quality are expected to result from either alternative.

### 3.3.10. Natural Resources

Some of the impacts on wildlife which will occur as a result of future development in the project area include: 1) Loss of habitat, 2) Increased presence of dogs who may harass some species, 3) Increased human activity and 4) increased use of trail bikes, snowmobiles and all-terrain vehicles.

These impacts are expected to occur with either alternative

since, though the interchange may change the character of development (increase in commercial versus residential), development in the area is expected to occur regardless of whether the interchange is constructed.

### 3.3.11. Land Use Impacts

The land near the the project area provides a desirable living area and some development of commercial and residential property has already occurred. Access to the area, at present, is difficult and the rate at which future development occurs depends to a significant degree on when adequate access is provided.

If the Beltview Interchange Alternative were constructed, this access would be provided and property owners in the area have indicated that development in the area would occur much more rapidly. If the No-Build Alternative were selected, development would probably occur at it's current rate.

If the Beltview Interchange Alternative were constructed, commercial development near the interchange would be more attractive and would probably increase. In anticipation of the increased desirability of the land for commercial development, one property owner has requested a land-use exchange whereby approximately 30 acres designated residential land near the interchange would be converted to commercial designation in exchange for 30 acres near the existing intersection of Beltview and Saddle Drives being converted from commercial to residential.

### 3.3.12. Historic/Cultural/Archaeological Sites

Neither alternative would affect any known historical, cultural or archaeological sites in the project area (See Section 5.12).

### 3.3.13. Traffic and Safety

Future traffic volumes on southeast Helena residential streets will increase substantially regardless of whether or not the interchange is developed. It is projected that there will be an additional increase in traffic volumes on the following existing streets as a result of construction of the Beltview Interchange Alternative:

Table 3-1: Streets with Increased Traffic

| LOCATION | INCREASE(vpd) |
|---|---|
| Beltview Dr., Gold Rush Ave. to Saddle Dr. | 100-200 |
| Oakes St., Gold Rush Ave. to Winne Ave. | 200 |
| Saddle Drive | 0 |
| Winne Ave., Oakes St. to Colonial Dr. | 100-400 |
| Broadway Ave., Montana Ave. to Colonial Dr. | 300-1000 |
| Interstate 15, North of Capitol Interchange | 3,000 |
| Interstate 15, Capitol Intchg. to Beltview Intchg. | 6,800 |
| Elaine St., South of Highway 12 | 3,400 |

There will be a decrease in projected traffic volumes on the following streets as a result of construction of the Beltview Interchange Alternative:

Table 3-2: Streets with Decreased Traffic

| LOCATION | DECREASE(vpd) |
|---|---|
| California St., Winne Ave. to Colonial Dr. | 200-500 |
| Lamborn St., Winne to Prospect Ave. | 200-600 |
| Colonial Dr., California to Winne Ave. | 3,800-10,300 |
| 11th Ave., Montana to California Ave. | 800-11,100 |
| 11th Ave., Fee to Capitol Interchange | 2,900 |
| Prospect Ave., Montana Ave. to Capitol Interchange | 400-4,400 |
| Fee St., 11th Ave. to Prospect Ave. | 5,000 |
| Highway 12, East of Capitol Interchange | 3,100 |

Projected traffic volumes with and without the Beltview Interchange and the difference between the two are shown in more detail on Figures 5-3, 5-4 and 5-5 in Chapter 5.

3.3.14. Agriculture and Irrigation

No prime farmland, unique farmland nor farmland of statewide or local importance will be affected by either alternative.

### 3.3.15. Energy

The net effect of construction of the Beltview Interchange Alternative and related streets will be a reduction in energy consumption (see Section 5.17).

### 3.3.16. Construction Impacts

Since there are no homes, schools, businesses or churches located near the proposed interchange, there should be no adverse impact from construction noise.

Construction of the Beltview Interchange Alternative will have a temporary adverse impact on air quality in the project area. The impacts will be effectively mitigated by adherance to proper construction practices and to federal, state and local regulations and to the Montana Department of Highways Specifications (1) relating to air quality.

There will be approximately 250,000 cubic yards of additional fill material required to construct the Beltview Interchange Alternative. Excavated material unsuitable for constructing embankments will require disposal in an approved waste site.

If the Beltview Interchange Alternative is constructed, some area streets will receive a temporary impact resulting from increased traffic of trucks and other construction equipment. Travel on the interstate highway may be affected during some phases of construction but little or no delay is expected and no detours will be required.

### 3.3.17. Related Street Construction

If the No-Build Alternative were selected, access to the project area would be from existing streets and not from the interstate highway. These streets would probably be extended to serve residential and commercial development as it occurs. Colonial Drive would be impacted most and as indicated above, would receive up to 10,300 vpd additional traffic if the Beltview Interchange were not constructed.

If the Beltview Interchange Alternative is constructed, it is planned that Colonial Drive will be extended southeast to connect with the interchange as part of the initial interchange construction. Beltview Drive from Saddle Drive to the interchange is planned for construction in 1987. The extension of Beltview Drive from the interchange northeast to Highway 12 is projected to occur during the period 1990 to 2000 but is dependent on future growth and development. The construction of the frontage road from the interchange along the southwest side of the interchange to the East Helena Overpass and the frontage road from the northeast side of the interchange to 18th Street near the MDOH complex will occur as growth in the area requires and as funding becomes available.

### 3.3.18. Costs

The construction cost of the proposed interchange and the connection to the existing Colonial Drive is estimated at $1,729,000. Administration and engineering costs are estimated at $202,000 The total cost of the interchange project is therefore estimated at $1,931,000.

All costs associated with the project, including administration, coordination and construction supervision costs incurred by the Montana Department of Highways, will be paid through the creation of a special improvement district (S.I.D.) which will include commercial property adjacent to the interchange. Property owners affected approve of the project, are aware of the costs and support the S.I.D..

If the No-Build Alternative is selected, no direct construction costs will be incurred.

## 3.4. PREFERRED ALTERNATIVE

Based on the analysis, information and studies available to-date and on public scoping meetings held, the alternative preferred by the Montana Department of Highways and the Federal Highway Administration is the Beltview Interchange Alternative. Final selection of an alternative, however, will not be made until the results of the circulation of this environmental impact statement and the public involvement process have been fully evaluated.

## 3.5. REFERENCES FOR CHAPTER 3

Copies of all references listed below are available for inspection at the offices of Morrison-Maierle, Inc., 910 Helena Avenue, Helena, Montana 59601.

1. Montana Department of Highways, Standard Specifications for Road and Bridge Construction, 1981 Edition.

# 4. AFFECTED ENVIRONMENT

## 4.1. SOCIOECONOMIC BASELINE CHARACTERISTICS

The Helena urban area is the socioeconomic study area for the proposed project and encompasses the City of Helena and remaining areas of southern Lewis and Clark County plus northern Jefferson County. Within the study area, the southeast section of the City of Helena has potential to experience the most notable social and economic effects from project development. Southeast Helena is generally defined as the area bounded by North Montana Avenue to the west, 11th Avenue to the north, U.S. Interstate Highway 15 to the east, and the Lewis and Clark County line to the south.

### 4.1.1. Population Characteristics

Lewis and Clark County's mid-1985 population is estimated to be 47,000. Ninety-five percent of county residents live in this southern portion of the county, within the Helena urban area. The City of Helena's estimated 1985 population is 25,500. The remainder of the south county population resides in the City of East Helena, population 1,650, and in unincorporated areas within commuting distances of Helena. Approximately 18,000 persons live in unincorporated areas of southern Lewis and Clark County. Most people residing in unincorporated areas live in the Helena Valley.(1)

The proposed interchange is also within one mile of Jefferson County to the south. Jefferson County's mid-1985 population is estimated to be 8,000. Approximately 3,400 Jefferson County residents live in the northern portion of the county.(1) Northern Jefferson County residents are within easy commuting distances of jobs and services available in Helena.

Lewis and Clark and Jefferson counties have recently experienced population growth at rates faster than the state as a whole. Since 1960, the populations of Lewis and Clark and Jefferson counties have grown by 68 and 80 percent respectively, compared to statewide growth of less than 25 percent.(2)

Table 4-1: Population Trends
Montana, Lewis and Clark County and Jefferson County
1960-1985

| Year | Montana | Lewis and Clark County | Jefferson County |
|---|---|---|---|
| 1960 | 674,767 | 28,006 | 4,279 |
| 1970 | 694,409 | 33,281 | 5,238 |
| 1980 | 786,690 | 43,039 | 7,029 |
| 1985 | 833,000* | 47,000* | 8,000* |

Source: U.S. Department of Commerce. Census of Population, Montana, 1960-1980.

*1985 population figures are estimates based on postal customers and building permits. Estimates are rounded.

In Lewis and Clark County, the majority of recent population settlement has occurred outside of established cities. Between 1960 and 1980 the population of unincorporated areas in Lewis and Clark County grew by 11,300, while the population within the City of Helena grew by 3,700 and the population of East Helena did not appreciably change. Most recent settlement in Jefferson County also has occurred in unincorporated areas.(2) Recent settlement has been most notable in northern Jefferson County where no incorporated communities exist.

The Lewis and Clark County Comprehensive Plan cites a number of reasons for the dramatic increase in people living outside of incorporated cities. Undeveloped land in the valley has generally been less expensive than vacant land in Helena. Policies of federal government home finance agencies created more favorable financing opportunities for home development outside of Helena. Many people wanted to live in the country-like atmosphere and others were avoiding what were perceived as higher development costs within the city. Higher property taxes within Helena also may have discouraged new home construction within its limits.(3) The Areawide Planning Organization's observations are also applicable to recent settlement in northern Jefferson County.

Since 1980, there has been some change in the settlement patterns in the study area. Unincorporated areas in Lewis and Clark and Jefferson counties continue to attract the majority of new settlement. The difference has been in the City of Helena, which has been growing at a rate faster than in previous years. Between 1980 and mid-1985 the city's population is estimated to have increased by nearly 1,600. The city grew by only 1,200 during the entire 1970-1980 decade.

Table 4-2: Estimated Population Change
1980-1985

| Year | Helena | S. Lewis and Clark County (unincorporated areas and E. Helena) | N. Jefferson County (unincorporated areas only) | Total for Helena Urban Area |
|---|---|---|---|---|
| 1980 | 23,938 | 17,114 | 2,758 | 43,810 |
| 1985 | 25,500 | 19,800 | 3,450 | 48,500 |
| Change | +1,600 | +2,700 | + 700 | +5,000 |

* Population estimates for 1985 are based on increases in residential customers served by the Helena, East Helena, Clancy and Jefferson City post offices, and building permits for new residences within the City of Helena, between 1980 and 1984. Population estimates are rounded.

City of Helena building permit records for new housing units

indicate recent new housing development within Helena has occurred mainly in the southeastern and northcentral parts of the city. Growth in southeastern Helena is pertinent to the Beltview Interchange project, because this area is next to the area that will be directly affected by project development.

Table 4-3: Estimated Population Change*
Southeastern Helena
1980-1985

| Year | Population |
|---|---|
| 1980 | 4,143 |
| 1985 | 5,025 |
| Change | + 900 |

*Population estimates are rounded.

Between 1980 and 1985, the population of southeastern Helena increased by an estimated 900 persons. This increase represented 56 percent of population growth within the City of Helena and nearly 20 percent of total growth in the Helena urban area.

The land in the immediate vicinity of the proposed interchange is currently uninhabited. Future settlement in southeastern Helena is expected to extend into this area.(4)

4.1.2. Economy

Economic activity in the socioeconomic study area is centered in the City of Helena. Within the city are located all but one of the urban area's major employers and the vast majority of its smaller employers. The city is also the focal point of area commerce. City businesses account for over 90 percent of retail, wholesale and service sector earnings in the urban area.(5)(6)(7)

East Helena is the only other employment and commercial center in the socioeconomic study area. Unincorporated areas of southern Lewis and Clark County and northern Jefferson County serve as Helena bedroom communities. Most employed people living in these areas work in Helena. Few jobs and little commercial development are located in the unincorporated areas.

The Helena urban area has experienced a long period of positive economic growth--reflected in Lewis and Clark County employment statistics. Between 1960 and 1980, employed county residents increased by 75 percent compared to 42 percent for Montana as a whole.

Table 4-4: Historic Employment
Montana and Lewis and Clark County
1960-1980

| Year | Montana | Lewis and Clark County |
|---|---|---|
| 1960 | 231,270 | 11,746 |
| 1970 | 244,608 | 13,989 |
| 1980 | 328,316 | 20,553 |

Source: U.S. Department of Commerce. City County Data Book, 1962, 1972, 1982.

Helena's status as capital of Montana has had a positive influence on the area's economy. Earnings by state and federal government employees are estimated to account for 67 percent of countywide earnings from basic employment.(3). The area's economic and population growth in the 1970-1980 period was largely the result of increases in government employment.

Table 4-5: State and Federal Government Employment
Lewis and Clark County
1970, 1975, 1980, and 1984

| Year | State Government | Federal Government |
|---|---|---|
| 1970* | 2,439 | 1,026 |
| 1975 | 3,033 | 1,089 |
| 1980 | 4,025 | 1,213 |
| 1984 | 3,981 | 1,313 |

Source: Ward Styles, Montana Department of Labor and Industry. June 1985.
*estimated from census data.

The number of government employees has been more stable in the 1980s. This stability is a result of state and federal government policies to limit public sector spending. State government employment has decreased slightly, but has been counterbalanced by modest growth in federal employment.

Other activities contributing to the area's basic economy include communications services, metals processing, and chemical manufacturing. Regional trade contributes to the area's basic economy, but it is not as significant as in the state's other larger urban areas. Helena's geographic trade area is primarily composed of federally owned forest lands and sparsely settled agricultural areas, and does not provide a large regional market for goods and services. Additional commerce occurs in Helena because of the city's role as the center of state government; particularly in the form of businesses supplying materials and specialized services to government agencies. The city's central location allows it to serve as a marketing and wholesale

distribution and financial center for western Montana. Tourism also contributes positively to the area's economic base. Agriculture plays a minor role in the economy of Helena, compared to other areas of Montana.

The Helena area economy has not experienced the growth and decline cycles that have troubled Montana communities with natural resource-based local economies. The stability of the Helena economy is reflected in local unemployment rates consistently below the state norm.

Table 4-6: Average Annual Unemployment Rates
Montana and Lewis and Clark County
1976-1984

| Year | Montana | Lewis and Clark County |
|---|---|---|
| 1976 | 6.9% | 5.7% |
| 1977 | 6.1% | 4.9% |
| 1978 | 5.1% | 4.8% |
| 1979 | 6.0% | 5.3% |
| 1980 | 6.4% | 5.0% |
| 1981 | 6.9% | 5.7% |
| 1982 | 8.6% | 7.2% |
| 1983 | 8.8% | 7.2% |
| 1984 | 7.4% | 6.1% |

Source: Montana Department of Labor and Industry. Montana Employment and Labor Force, Monthly and Quarterly Reports, 1977-1985.

Additionally, local labor force participation rates have historically been among the highest in the state. The higher participation rates are largely the result of the employment opportunities available to women in state and federal government. Helena area residents also enjoy higher income levels and a lower incidence of poverty.

Table 4-7: Economic Indicators
Montana and Lewis and Clark County, 1980

| Indicator | Montana | Lewis and Clark County |
|---|---|---|
| Labor force participation rate | 61.2% | 67.7% |
| Female labor force participation rate | 48.9% | 59.0% |
| Per capita income | $9,412 | $10,558 |
| Median family income | $18,413 | $20,715 |
| Persons below poverty level | 12.3% | 9.0% |
| Families below poverty level | 9.2% | 6.2% |

Source: Montana Department of Commerce. County Profiles, 1983.

The state capitol area and areas within or near the Helena Central Business District (CBD) are centers of employment in the urban area.

Table 4-8: Major Employers
Helena Urban Area, 1984

| Employer | Number of Employees |
|---|---|
| State of Montana | 4,150 |
| U.S. Government | 1,250 |
| Mountain Bell | 700 |
| Helena Schools | 700 |
| City and County Government | 500 |
| St. Peter's Hospital | 400 |
| American Smelting and Refining | 350 |
| Montana Physicians Service | 230 |
| Carroll College | 200 |
| Montana Power | 110 |

Source: Helena Chamber of Commerce, Helena Area Profile, 1984.

Major retail and service centers are the Central Business District, the Capitol Hill Mall, the Hustad Center, the Lundy Center, and the Northgate Plaza Shopping Center. Commercial strips have also developed in the Prospect-11th Avenue area, on Euclid Avenue, along the Cedar-East Main Street corridor, and on north Montana Avenue.

In 1982 there were 305 retail and 293 service establishments with payrolls within the City of Helena accounting for over 98 percent

of the urban area gross receipts for retail and service businesses. Between 1972 and 1982 the number of retail businesses with payrolls increased by 55; the number of service establishments increased by 94. Adjusting for inflation, retail sales grew by 28 percent and service business receipts by 96 percent.

Table 4-9: Retail Trade Characteristics
Within the City of Helena
1972, 1977, 1982

| Year | Number of Establishments | Sales ($1,000) | Employees |
|---|---|---|---|
| 1972 | 256 | $83,300 | 1,996 |
| 1977 | 270 | $160,375 | 2,962 |
| 1982 | 305 | $220,376 | 3,385 |

(Table only includes businesses with payrolls)
Source: U.S. Department of Commerce. Census of Retail Trade, 1972, 1977 and 1982.

Table 4-10: Service Industry Characteristics
Within the City of Helena
1972, 1977, 1982

| Year | Number of Establishments | Sales ($1,000) | Employees |
|---|---|---|---|
| 1972 | 145 | $15.335 | 1,006 |
| 1977 | 183 | $29,142 | 1,327 |
| 1982 | 239 | $62,333 | 1,925 |

(Table only includes businesses with payroll)
Source: U.S. Department of Commerce. Census of Selected Service Industries, 1972, 1977 and 1982.

The census delineation of the Service Sector does not include financial, insurance and real estate establishments, which are major business activities in the Helena area. Between 1972 and 1982 the number of these businesses increased from 97 to 116. Employment grew from 1,018 to 1,227.(8).

Commerce in Helena has been increasing as a result of overall growth in the urban area's population and economy. The Capitol Hill Mall has recently doubled its size.(9). Other new businesses have opened along the city's commercial strips. Most of the area's smaller shopping centers and malls have also undergone renovation and expansion.

Helena's Central Business District, and other older commercial areas within the city are not experiencing the retail business growth in the city's newer commercial areas. Many retail businesses in the downtown area have closed or relocated. The city's CBD has lost its status as the area's primary retail

center and is becoming a financial, business service, dining and entertainment center for the area. Increasingly, downtown retail businesses are small clothing stores, specialty shops and catering to businessmen and women, and tourists.(10)

The land to the north and west of the proposed Beltview Interchange (along Colonial Drive) is currently designated for commercial development by the Helena Comprehensive Plan. This approximately 70 acre area is developing and would likely continue to develop irrespective of nearby access to Interstate 15. Current commercial uses include a bowling alley, a car wash, medical service-oriented professional offices, and public and private health care facilities. The nearby presence of St. Peter's Hospital has attracted health care service development to this area.

4.1.3. Housing Characteristics

In 1980 there were over 17,000 year-round dwelling units in southern Lewis and Clark County and northern Jefferson County. The majority of housing units were located in the City of Helena. Over 60 percent of area housing units were detached single-family homes. Units in multi-family structures accounted for slightly more than 20 percent of housing units, and about 15 percent of the housing stock were mobile homes. Seventy percent of housing units were lived in by their owners. The vacancy rate for year-round dwelling units was 7 percent.(11)

Most multi-family housing in the Helena urban area is located within the City of Helena. Most mobile homes are located in unincorporated areas in the Helena Valley and northern Jefferson County. The housing stock within Helena is older than housing in the surrounding areas. In 1980, the average number of people per occupied housing unit was 2.5 in the city, 3.0 in other areas of southern Lewis and Clark County, and 3.1 in northern Jefferson County.(11)

Table 4-11: Total Dwelling Units
Helena Urban Area, 1980
(year-round units only)

| Area | Total Units | Occupied Units |
|---|---|---|
| Helena | 10,236 | 9,475 |
| Other areas of S. Lewis and Clark Co. | 6,210 | 5,803 |
| Northern Jefferson Co. | 927 | 890 |
| TOTAL | 17,373 | 16,168 |

Source: U.S. Department of Commerce. Characteristics of Population and Housing, 1982.

At the time of the census, 1,650 dwelling units were located in the southeastern portion of the City of Helena. Seventy-five percent of these units were owner occupied. The majority of the area housing was single-family homes. The remainder of the area housing was multi-family structures. No mobile homes were located in southeastern Helena. The housing vacancy rate was high--9 percent--reflecting recently completed new construction. The mean value per owner-occupied unit was approximately $62,000 compared to $52,000 for the urban area. Median rent was $225 per month, compared to $215 for the urban area.(11)

Since the census, population growth has resulted in an estimated 1,648 additional housing units being developed in the urban area.

Table 4-12: Estimated New Dwelling Units
Helena Urban Area
Spring 1980-Spring 1985
(year-round units only)

| Area | Units |
|---|---|
| Helena | 559 |
| Other areas of S. Lewis and Clark Co. | 860 |
| Northern Jefferson Co. | 229 |
| TOTAL UNITS | 1,648 |

*Estimates are based on building permits issued 1980-1984 within the City of Helena, and new residential postal customers 1980-spring 1985.

Approximately one-third of recently developed housing units are located inside the City of Helena. Within the city, the mix of new housing has been about evenly divided between detached single family homes and units within multiple dwellings. No new mobile home parks have opened since the census, and there has been no significant change in the number of mobile homes within the city.

Table 4-13: Estimated New Housing Units by Type
Helena
1980-spring 1985

| Type | Structures | Units |
|---|---|---|
| Single-Family Detached | 304 | 304 |
| Multi-Family | 67 | 255 |
| Total | 371 | 559 |

*Estimates are based on building permits for new housing construction issued by the City of Helena between 1980 and 1985.

Most recently developed housing within the City of Helena has been located in the southeastern and northcentral areas of the city. Since 1980, southeastern Helena has attracted over half of the new housing units located in the city.

Most of the estimated 330 new housing units in southeastern Helena have been located near previous residential development; continuing a pattern of growth to the south and east. The mix of recent housing development contains a greater proportion of dwellings in multi-unit structures than previously existed in the area.

Table 4-14: Estimated New Housing by Type
Southeastern Helena
1980-spring 1985

| Type | Structures | Units |
|---|---|---|
| Single-Family Detached | 146 | 146 |
| Multi-Family | 50 | 172 |
| Total | 196 | 318 |

Source: City of Helena, Building Department, 1985.

### 4.1.4. Demographic and Social Characteristics

The demographic and social characteristics of the residents of the Helena urban area are not unusual. Southern Lewis and Clark County and northern Jefferson County contain very small minority populations. Non-Caucasians compose only two percent of the area's population. Women compose a slight majority of the area's population, which is typical in the state. The population's median age in 1980 was 29, the same as for Montana as a whole.

Approximately 60 percent of area residents were born in Montana, which is slightly higher than the state norm. The average household size is about 2.7 people. Area residents have achieved higher educational levels than is typical in Montana.(12)

People living within the City of Helena tend to be older and live in smaller-sized households than people living elsewhere in the urban area. Unincorporated areas have attracted many young families with children. This settlement pattern is reflected in increasing school enrollments in outlying areas and declining school enrollments within the city.(13)

No one lives in the land area immediately adjoining the site of the proposed interchange. The nearby southeastern Helena area is a mix of well-established and recently developed neighborhoods. Residents of southeastern Helena tend to be slightly older, have slightly larger families, and are more affluent than residents of the Helena area as a whole. A high owner occupancy rate for homes in established sections of the area suggests a higher degree of neighborhood stability. The Helena School District observes that southeastern Helena has proportionately more older school age children and fewer younger school age children than is typical in the district.(13)

Increased traffic on residential streets has been an issue among residents of southeastern Helena for several years. Persons living along California, Broadway and Winne Streets have expressed concern that their residential streets not be turned into major travel corridors. The issue historically has focused on the safety hazards posed to children by higher volume traffic, the disruptive effects of traffic on neighborhood character, the noise and visual effects, and the possible devaluation of residential property.

4.1.5. Tax Base Characteristics

The proposed Beltview Interchange site is in the taxing jurisdictions of Lewis and Clark County, Helena Elementary School District 1, Helena High School District 1, and adjacent to the City of Helena's taxing area. The 1984-1985 taxable values of the City of Helena and Lewis and Clark County were $31 million and $55 million respectively. The taxable value of Helena Elementary School District 1 was $35 million and High School District 1 was $55 million. Mill levies were: Helena, 75.12; Lewis and Clark County, 83.18; and Elementary and High School Districts 1, 256.84.(15)

The per capita tax base of Helena and Lewis and Clark County is smaller than the norm in Montana because of the absence of sizable industrial development in the Helena area. The local tax bases gradually have been losing value relative to inflation. Taxable values will be adjusted upward when the state implements its new tax appraisal system in 1986.

4.1.6. Public and Private Service Characteristics

Local government public services in the Helena urban area are

provided by the City of Helena, and by Lewis and Clark and Jefferson counties. Public school services are provided by the Helena and East Helena School districts in Lewis and Clark County, and by the Clancy, Montana City and Jefferson County School districts in northern Jefferson County.

Police and fire protection services are currently provided to the site of the proposed interchange by Lewis and Clark County. When annexed, these services will be provided by the City of Helena. Helena's per capita ratio of law enforcement officers is one officer per 700 people, which is higher than is typical in Montana. Helena police enjoy a higher than normal apprehension rate. Helena's Eastside Fire Station is about one mile from the interchange site. The absence of adequate water pressure in the vicinity of the interchange is a limitation to fire protection in the area.(4)

Helena School District 1 provides public education services for areas near the interchange site. Smith Elementary School is located in this area and it has been experiencing increasing enrollment. While Smith School's enrollment is not currently at capacity, the Southeast Helena Comprehensive Plan predicts that a new school eventually will be required in southeast Helena because of continued population growth. School District 1 owns a vacant school parcel on Saddle Drive, west of the interchange site.

Helena Middle School and Helena High School also serve southeast Helena. Neither school is expected to experience capacity problems in the near future. Overall, Helena School District 1 has been experiencing a slight decline in student enrollment.(13)

Table 4-15: Historic School Enrollment
Helena School District 1
1960-1985

| Year | Elementary School | Jr. High School | Sr. High School |
|---|---|---|---|
| 1960 | 2,243 | 1,008 | 868 |
| 1970 | 3,340 | 1,837 | 1,809 |
| 1980 | 3,207 | 1,501 | 2,530 |
| 1985 | 2,998 | 1,214 * | 2,651 * |

Source: John Campbell, 1985.
*in 1981, 9th graders were transferred from junior to senior high schools.

St. Peter's Hospital is a few blocks from the interchange site. The hospital generally has excess capacity but occasionally experiences crowding in some departments. The hospital also provides local ambulance service.

## 4.2. PUBLIC UTILITIES

### 4.2.1. Sewer and Water

The land near the proposed Beltview Interchange is outside of the City of Helena, and the area currently has few public or private services available. A gravel extension of Colonial Drive parallels the interstate to the west, and on the east side of the highway there is a low-use dirt road. City of Helena water and sewer services are nearby but not within the land parcels adjoining the interchange site. The water storage and distribution systems in southeast Helena have capacity limitations, and would require improvements in order to serve the area. The area near the interchange is upgrade of the city's waste water treatment plant. The waste water system has excess capacity to serve increased demand for service.(4)

### 4.2.2. Natural Gas/Electricity/Telephone/Cable TV

Electricity, natural gas and phone service networks are located near the interchange site. Montana Power electrical transmission (overhead) and natural gas lines run parallel to I-15 in the vicinity of the proposed interchange. A Mountain Bell telephone cable is also buried in this area. Cable television service is available within the city limits of Helena.

## 4.3. FLOOD HAZARD/STORM DRAINAGE

Runoff in the vicinity of the Beltview Interchange is caused by snow melt and rainfall. Peak runoff is due to runoff from rainfall generally occurring in May or June. At the present time the area is undeveloped, and the runoff approximates historical runoff conditions.

The interchange is in an area that was included in the South Hills Planning Study that was prepared for the Lewis and Clark Areawide Planning Organization in 1985.(16) This study contained an assessment of storm drainage for both present conditions and anticipated future development.

The principal concerns as expressed in this South Hills Planning Study report are: 1) structures may tend to encroach upon natural drainages as development occurs in the area; 2) runoff will increase as development occurs and the area becomes more impervious; and 3) erosion and flooding may increase as runoff increases.

## 4.4. WETLANDS AND FLOOD PLAINS

There are no wetlands or flood plains within or near the project area.

## 4.5. RELOCATIONS

A small structure which would be removed during construction is located near the northeast end of the proposed interchange crossroad. The structure was built in about 1950 to be used as a

firing range for a gun club. The structure has not been used by the club for several years.

No other homes, businesses, schools, churches or other businesses or organizations are located within the project area.

## 4.6. AIR QUALITY

The Helena Valley is broad and mountainous, extending approximately 35 miles from east to west and 25 miles from north to south. The valley is surrounded by mountains on three sides forming a bowl. The City of Helena is located near the south end of the Helena Valley. The elevation varies from 3,850 feet in the northern part of the city to over 4,200 feet at the extreme southern edge of the city.

The Helena area, including the Beltview Interchange area, is classified under the Prevention of Significant Deterioration (PSD) portion of the Federal Clean Air Act of 1977 as Class II. Class II designation provides for well controlled growth before the air quality deterioration is considered significant. Standards for the evaluation of air pollution levels have been adopted by both the federal government and the state government. Federal standards are divided into primary and secondary standards. Primary standards are air quality levels which are judged necessary, with an adequate margin of safety, to protect the public health. Secondary standards are air quality levels which are judged necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

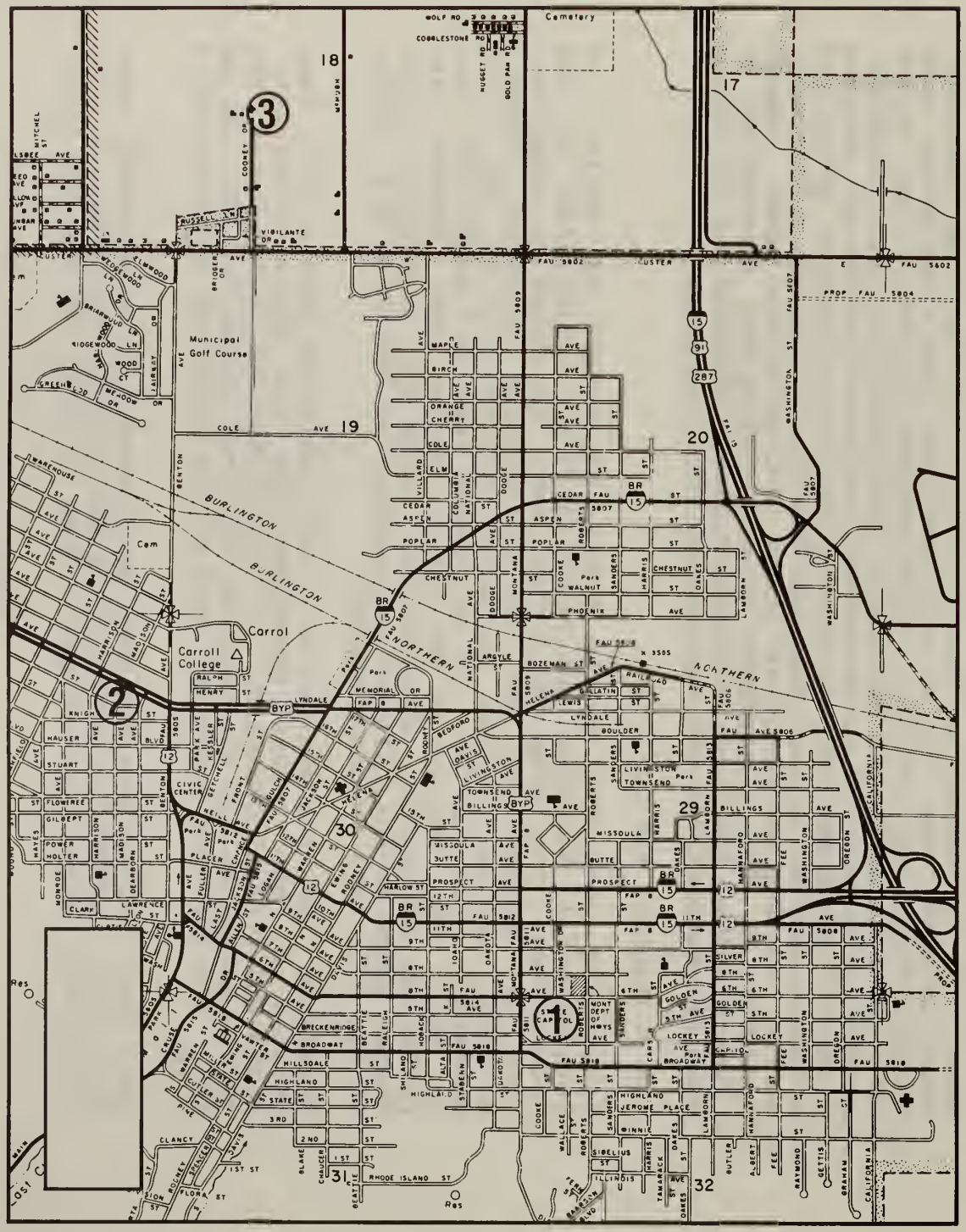
The Montana Department of Health and Environmental Sciences (MDHES) operates three total suspended particulates (TSP) monitoring sites in the Helena metropolitan area: Capital Courts, the old Cooney Convalescent Home, and the Cogswell Building. In addition, MDHES, in conjunction with ASARCO is running an air monitoring network in and around the East Helena area. TSP and lead is monitored at six sites: Montana City, South, Hasties, Hadfield, Fire Station, and Dartman. All of the monitoring sites are shown in Figure 4-1.

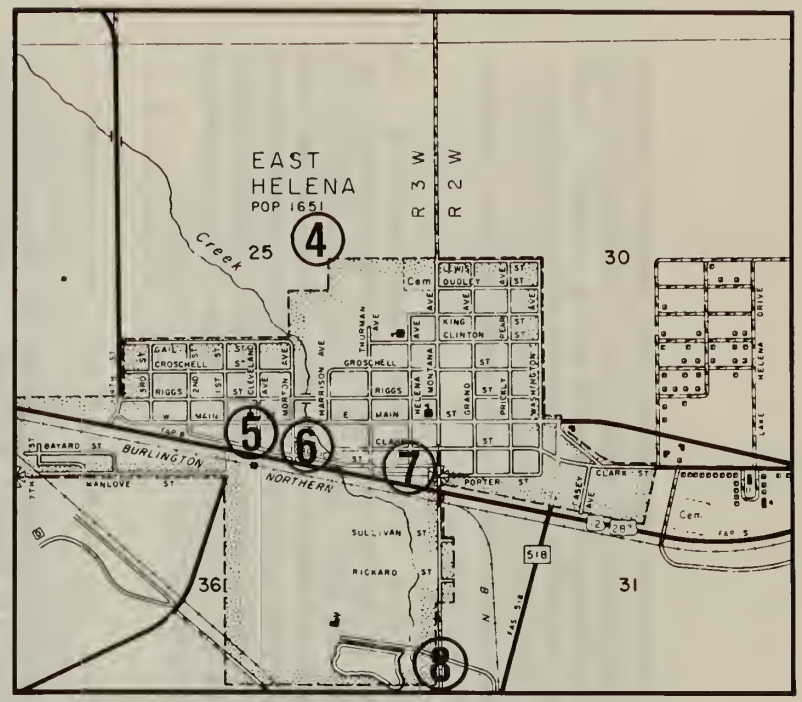
Carbon monoxide (CO) is not presently monitored in the Helena area.

No air quality measurements have been made in the specific area of the Beltview Interchange project. The nearest air quality measurements were made at the Cogswell Building, approximately 3,000 yards from the project site.

### 4.6.1 Dispersion Meteorology

The mountains surrounding the Helena Valley have a great effect on the air pollution in the area. By sheltering the valley from the wind and causing cold air drainage off the mountains during late fall and winter nights, the mountains increase the probability of temperature inversions. Temperature inversions




# Helena and East Helena Air Quality Monitoring Sites

① Cogswell Building
② Capital Courts
③ Old Cooney Home
④ Dartman
⑤ Hadfield
⑥ Firehall
⑦ Hastie Residence
⑧ South
⑨ Montana City School
(Not shown on map)

FIGURE 4-1

occur when the cool, dense air flows down from the mountains and remains close to the surface, holding the pollution in the valley area. The altitude, relative dryness, frequent snow cover, lack of cloud cover, and long winter nights also favor the formation of inversions. Inversions are present approximately 30% of the time according to an Environmental Protection Agency (EPA) study done in 1969 and 1970 (27).

Wind speed and wind direction are important parameters in determining where and how fast pollutants are transported or dispersed. The predominant winds in the Helena area are from the west; west-northwest, west, and west-southwest directions and account for about 45% of the winds annually. Calm conditions occur nine percent of the time. Wind speed of less than three miles per hour occurs about 36% of the time. Calm or low wind speed conditions allow for the accumulation of pollutants.

### 4.6.2. Emission Sources

The major sources of total suspended particulates in the Helena area are the primary lead smelter in East Helena, particulates generated by residential wood burning, fugitive dust generated along unpaved roads, and re-entrained dust from along paved roads during snow-free periods. Other sources of TSP in the Helena Valley are agricultural activity, wind erosion, gravel crushers, asphalt plants, and automobiles. The cement plant in Montana City, south of the project site, is also a source of TSP in the Helena area. The primary lead smelter in East Helena is the major source of $SO_2$ and lead pollutants in the Helena area. Carbon monoxide is the by-product of the incomplete combustion of organic fuels. The major sources of carbon monoxide in the Helena area are automobiles and residential wood burning.

### 4.6.3. Ambient Air Quality

Monitoring conducted by the Montana Department of Health and Environmental Sciences has resulted in the designation of the Helena area, including the project area, as either an attainment area or unclassified for all pollutants: oxidants (ozone), nitrogen oxides, carbon monoxide, sulfur dioxide and total suspended particulates. An attainment area is a geographic area in which the quality of the air is better than federal air pollution standards; unclassified areas are geographic areas where there is insufficient information to determine the status of the pollutant concentrations.

Standards for the evaluation of air pollution levels have been adopted by the Federal Government and the State Government. State and federal standards for total suspended particulates and carbon monoxides and the maximum monitored values for TSP during 1982 and 1983 are shown for each of the monitored sites on Table 4-16.

The East Helena area has been designated a non-attainment area for total suspended particulates and sulfur dioxide. A non-attainment area is a geographic area in which the quality of the

air is worse than federal air pollution standards. The non-attainment designation for sulfur dioxide resulted from violation of the federal primary standards; the designation for TSP resulted from violation of the federal secondary standards. The MDHES has requested from the EPA a redesignation of the East Helena area to an attainment area for sulfur dioxide. Modifications to the ASARCO smelter have significantly reduced the sulfur dioxide concentrations in the area.

During 1983, the Montana 24-hour standard for particulates was violated once at the Capital Courts monitoring site and once at the Hadfield site in East Helena. There were eleven violations of the federal calendar quarter standard for lead over the lead monitoring network around East Helena. No other state or federal standards were violated in 1983.

## 4.7. WATER QUALITY

There are no streams or lakes in the project area. Water resources are limited to runoff from storms and snowmelt and are discussed in FLOOD HAZARD/STORM DRAINAGE, above.

## 4.8. NOISE

One consideration of this study is to identify noise sensitive areas and locations where significant noise impacts might occur as a result of the increased access to I-15 and the resulting traffic redistribution on the local street network. There are several noise sensitive locations within the affected area, the most notable being St. Peter's Community Hospital, Cooney Convalescent Home, Smith School, several churches (First Lutheran Church and United Methodist church on Broadway and Seventh Day Adventist Church on Beltview Drive) and several medical clinics.

Table 4-16: Maximum Observed Total Suspended Particulate Concentrati in the Helena Area and State and National Air Quality Standards for TSP and Carbon Monoxide

| | Total Suspended Particulates (ug/m3) | | Carbon Monoxide (ppm) | |
|---|---|---|---|---|
| | Annual* | 24-Hr. | 8-Hr. | 1-Hr. |
| **Federal & State Standards** | | | | |
| Montana Standard | 75 | 200 | 9 | 23 |
| Federal Primary | 75 | 260 | 9 | 35 |
| Federal Secondary | 60 | 150 | 9 | -- |
| **Helena-Area Monitoring Sites** | | | | |
| Cogswell Building | | | | |
| 1982 | 42.3 | 114 | -- | -- |
| 1983 | 41.0 | 19.3 | -- | -- |
| Capitol Courts | | | | |
| 1982 | 51.3 | 183 | -- | -- |
| 1983 | 58.6 | 232 | -- | -- |
| Old Cooney Home | | | | |
| 1982 | 30.9 | 75 | -- | -- |
| 1983 | 33.9 | 147 | -- | -- |
| Dartman | | | | |
| 1982 | 36.5 | 85 | — | — |
| 1983 | 34.9 | 101 | — | — |
| Hadfield | | | | |
| 1982 | 60.8 | 133 | — | — |
| 1983 | 65.5 | 240 | -- | -- |
| Firehall | | | | |
| 1982 | -- | -- | -- | -- |
| 1983 | 65.5 | 142 | -- | -- |
| Hastie Residence | | | | |
| 1982 | 56.1 | 102 | -- | -- |
| 1983 | 52.8 | 135 | -- | -- |

| | Total Suspended Particulates (ug/m3) | | Carbon Monoxide (ppm) | |
|---|---|---|---|---|
| | Annual* | 24-Hr. | 8-Hr. | 1-Hr. |
| South | | | | |
| 1982 | 38.0 | 88 | -- | -- |
| 1983 | 30.8 | | | |
| Montana City School | | | | |
| 1982 | 73.5 | 188 | -- | -- |
| 1983 | 68.0 | 193 | -- | -- |

* Geometric mean is used for all annual concentrations and standards for TSP with the exception of the Montana Annual Standard, which is an arithmetic average. All short-term standards are not to be exceeded more than once a year.

Source: Montana Air Quality Data and Information Summary for 1983 (Montana Air Quality Bureau, 1985)

The most accepted measure of the magnitude of traffic noise is units of dBA (the sound pressure levels in decibels measured with a frequency weighting network corresponding to the A-scale on the standard sound level meter). The human ear generally perceives a sound level change of 3 dBA as barely noticeable and 10 dBA as twice as loud. In the analysis of noise measurements, the results are determined according to the category L/10, which is defined as that level of sound exceeded ten percent of the time for the period under consideration.

The Federal Highway Administration noise abatement criteria for specific receptors and land use types are identified in Table 4-17.

Noise measurements were made at eight locations within the study area. Figure 4-2 shows the location of the recording sites. Fifteen minute noise level recordings were made at each test location according to FHWA standard procedures using a microphone/tape recorder and sound level meter.

Predictions of present noise levels were made using the computerized FHWA Highway Traffic Noise Prediction Model SNAP 1.0 (Simplified Noise Analysis Program). The model utilizes the existing conditions (i.e., distance from observer to source, traffic volume and composition average vehicle speed, etc.) to compute a predicted noise level.(18) The measured L/10 dBA levels are used to predict noise levels reflecting the 30th highest hourly traffic volume. Table No. 4-18 shows the actual recorded noise levels and the SNAP 1.0 prediction of L/10 noise levels based on existing traffic conditions.

It should be noted that tests were taken between 8:00 a.m. and 5:00 p.m. during the first week of July, 1985, and at various distances from the roadway centerline based building setback distances. The highest levels were recorded on 11th Avenue but

were less than the allowable FHWA noise abatement criteria.

To determine if the prediction model is accurate, actual noise measurements in the field are compared with the predicted levels. As indicated in Table No. 4-18 the values produced from the two procedures compare closely (3 to 4 dBA) and, thus, indicate the FHWA prediction model is accurate for this study and can be used to predict future noise levels.

Table 4-17: Noise Abatement Criteria(17)

| Design Noise Level (L/10) | | Description of Land Use Category |
|---|---|---|
| 60 dBA (Exterior) | A) | Tracts of land in which serenity and quiet are extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| 70 dBA (Exterior) | B) | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks. |
| 75 dBA (Exterior) | C) | Developed land properties or activities not included in Categories A and B above; i.e., commercial and industrial development. |
| 55 dBA (Interior) | D) | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums. |

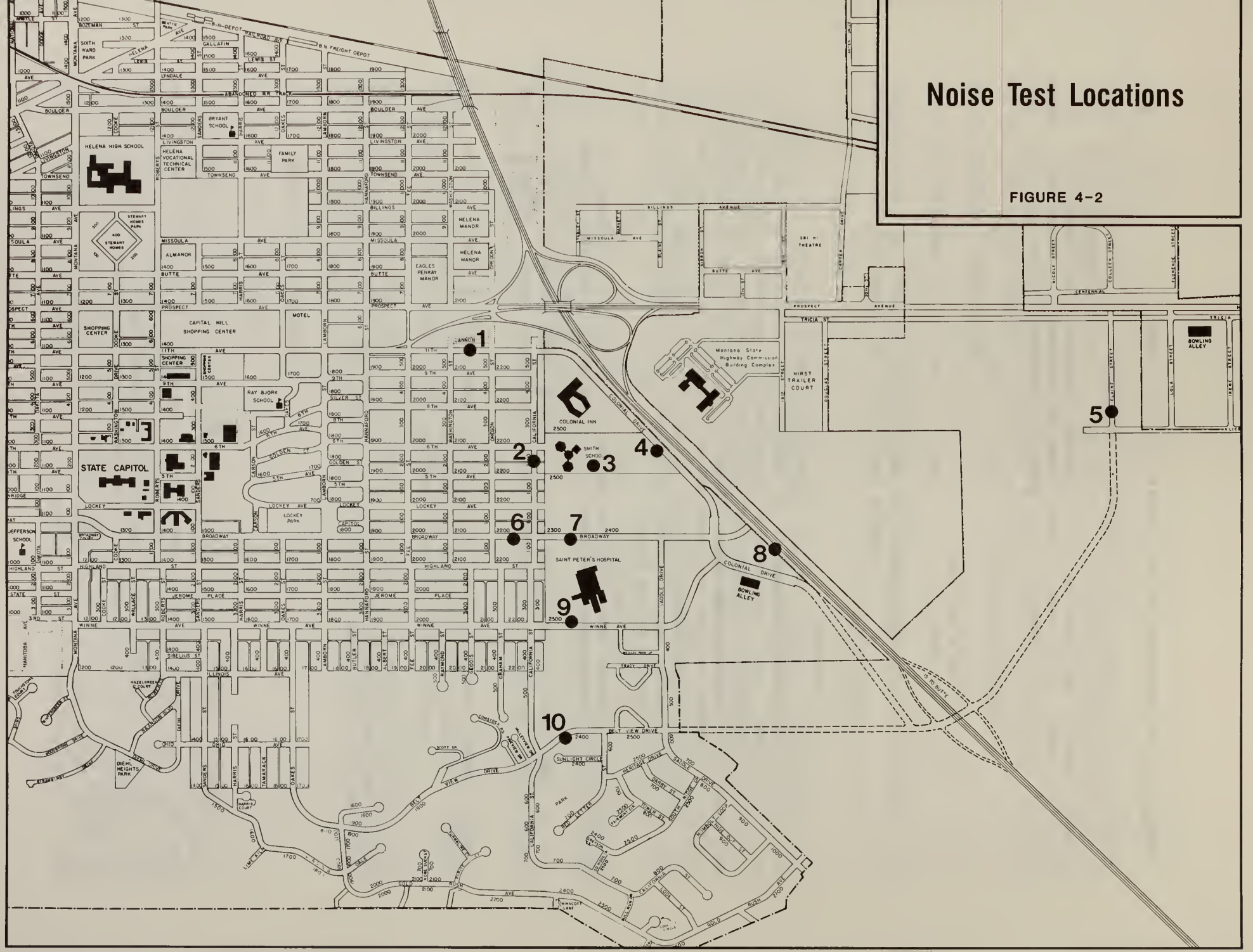

Noise Test Locations
FIGURE 4-2
1
2
3
4
5
6
7
8
9
10
STATE CAPITOL
HELENA HIGH SCHOOL
CAPITAL HILL SHOPPING CENTER
SAINT PETER'S HOSPITAL
COLONIAL INN
MOTEL
BOWLING ALLEY
HIRST TRAILER COURT
Montana State Highway Commission Building Complex
B-N FREIGHT DEPOT
ABANDONED RR TRACK
LOCKEY PARK
DIEHL HEIGHTS PARK
BROADWAY
LOCKEY AVE
PROSPECT AVENUE
BELT VIEW DRIVE
COLONIAL DRIVE

Table 4-18: Present Noise Levels (July, 1985)

| Site No. | Location | Distance from Centerline | Measured L/10 dBA Noise Level | SNAP 1.0 Prediction of Present L/10 dBA Noise Level |
|---|---|---|---|---|
| 1 | 2100 Block of 11th Avenue | 50' | 62 | 65 |
| 2 | 200 Block of California (Smith School) | 160' | 50 | 52 |
| 3 | East Side of Smith School | 800' | 51 | 51 |
| 4 | Colonial Drive | -- | * | * |
| 5 | Elaine Street | -- | * | * |
| 6 | 2200 Block of Broadway | 68' | 52 | 56 |
| 7 | 2300 Block of Broadway (St. Peter's Hospital) | 270' | 50 | 50 |
| 8 | I-15 (West R/W Line) | 88' | 54 | 56 |
| 9 | 2300 Block of Winne Avenue. (St. Peter's Hospital) | 100' | 54 | 50 |
| 10 | 2400 Block of Beltview Drive | 45' | 50 | 54 |

* No test of existing noise levels were made at this location.

## 4.9. VISUAL

The existing visual environment includes low rolling hills which are sparsely vegetated. The area is crossed by the existing 4-lane Interstate Highway 15 and by other unimproved access roads. Some commercial development has taken place which has affected the visual environment including the construction of a bowling alley and a car-wash.

## 4.10. NATURAL RESOURCES

### 4.10.1. Vegetation

Vegetation in the project area includes phlox, a variety of grasses and knapweed in disturbed areas.

### 4.10.2. Wildlife

A wildlife study of the Southeast Helena area, including the project area, has been completed by Karen Zackheim, Department of Environmental Studies, University of Montana.(19) The study area includes the area extending approximately 4 miles southwest of Interstate 15 beginning at the southeast city limit of Helena and running southeast along the interstate for approximately 6 miles. The study inventoried wildlife species found in the area and discussed the impacts of extensive subdivision development in the area.

Over 50 species of birds and mammals have been observed including mule deer, white-tailed deer, pronghorn antelope, elk and black bear, grouse and other game birds.

The study area receives only minimal hunting and other recreational use.

The study indicated that although no nests have been found, several species of raptors including the golden eagle, great-horned owl and saw-whet owl probably nest in the area.

The U.S. Fish and Wildlife Service has reviewed the project and has indicated that bald eagles, an endangered species, and other large raptors may migrate through the Beltview Interchange project area.(20)

## 4.11. LAND USE PLANNING

### 4.11.1. Land Ownership

The properties within the study area for this project consist of large privately-owned tracts or parcels owned by public and semi-public entities. A large tract of land directly west of I-15 and adjacent to the proposed interchange location is owned by the Diehl Company. The Montana Department of Highways complex is situated on a large state-owned parcel east of I-15 and south of U.S. 12 and is bordered by a large tract of private land owned by G.W. Padbury. Other private ownerships in the area exist west of the Diehl property and consist of residential and

office/commercial subdivisions. Public and semi-public ownerships in the area house Smith School, St. Peter's Hospital, two churches and parklands.

4.11.2. Land Use

Current development in the project area is confined to locations west of I-15 and adjacent to U.S. 12 east of I-15. Residential uses, ranging in density from single-family houses to multi-family developments, predominate this portion of southeast Helena. Recent subdivisions in the Gold Rush Avenue, Beltview, and Saddle Drive areas consist of both single family and multi-family housing. Commercial development to the west of I-15 is limited to areas fronting Colonial Drive between Eleventh Avenue and the Helena city limits. Professional offices, primarily housing medical services, have been developed in subdivisions fronting Beltview and Saddle Drives, Winne Avenue, and Broadway.

Development east of I-15 near the proposed Beltview Interchange is limited to the area adjacent to U.S. 12. Residential development in the area consists of a mobile home park and scattered single family units east of the Montana Department of Highways building. Commercial strip development with retail and industrial uses are also located along U.S. 12.

Much of the land adjacent to the proposed location of the Beltview Interchange is currently vacant and used as open rangeland. The land use trend for properties near the proposed interchange is for continued residential development resulting from the infilling of vacant lands in existing subdivisions and the construction of new residential areas as access improvements are implemented. Commercial development adjacent to I-15 and the interchange will also be stimulated by improved accessibility. The rate of commercial development will be dependent upon the timing and construction of the interchange.

4.11.3. Comprehensive Planning

Lands within the study area have been evaluated and designated for desirable land uses in several local planning documents. Lands within and adjacent to the southeast portion of Helena have been addressed generally by the Helena Comprehensive Plan 1981(21) and more specifically by recent plans contained in the Southeast Helena Comprehensive Plan(4) and the South Hills Planning Study(16). These recent planning studies have been incorporated into the Helena Comprehensive Plan(21) and contain more specific development plans for the area. The Crossfire Master Plan(22), a privately financed development plan, was prepared for a large area extending from the Bull Run Subdivision in Helena to Montana City and approximately two miles east and west of I-15. This plan was based on extensive natural resource capability studies and embodies the basic development philosophy of the Diehl Company. The Lewis and Clark County Comprehensive Plan, 1983(3) also addresses generalized land use planning within county areas likely to be affected by interchange development at Beltview Drive.

The Southeast Helena Comprehensive Plan(4) designated lands adjacent to the west side of I-15 and north of the proposed Beltview Interchange as commercial lands suitable for offices, businesses, and hotel/motel development. The plan further specified lands for medium to high density residential development in the area south of the interchange location and for low to medium density residential development to the Jefferson County line. The commercial core area near the proposed interchange is buffered from low and medium density residential neighborhoods by an area designated for residential and office development. The plan also identified a large area southwest of the interchange location as a limited residential/natural area due to the steep rocky terrain and as a means of maintaining the natural character of the area.

The lands east of the Interstate are addressed in the Helena Comprehensive Plan(21) and are generally intended for medium to high density residential or mixed residential, office, and commercial uses. An area directly east of the Montana Department of Highways has been specified for light industrial uses. The area just south of the Highway Department complex was also designated for public and semi-public land uses.

4.11.4. Zoning

Zoning designations for properties in the study area have been determined only for lands which lie within the city limits of Helena. All lands within the area of study but outside of the city limits are unzoned. Current zoning is consistent with existing land use planning or is contemplated to be so within the near future. Residential areas to the west and south of the proposed interchange have been designated as R-1 to R-4 zones, which allows for residential development at varying densities. This area also has a substantial area of R-0 lands, which allows a mixture of residential, office, and light service uses. A large area of B-2 zoned property exists between Saddle Drive and I-15 which can accommodate additional commercial development. The properties developed with public and semi-public uses at Smith School, St. Peter's Hospital, two churches, and the Montana Department of Highways complex have been designated as PLI zones (public lands and institutions districts). A small area east of the Department of Highways has been specified as CLM, representative of a commercial and light manufacturing district.

4.12. HISTORIC/CULTURAL/ARCHAEOLOGICAL SITES

Historical Research Associates (HRA) of Missoula, Montana conducted a cultural resource inventory of the project area in April 1985.(23)

As part of the inventory, the University of Montana and the Montana State Historic Preservation Office were contacted for information concerning previously recorded sites in or near the project area. Currently, there are no recorded sites within the project area.

The inventory also included a pedestrian survey of the project area.

One structure is located within the area of impact. The structure was built in 1949 or 1950 by a rifle club as part of a firing range complex and is no longer in use. Due to its late date of construction and operation, the structure and the firing range were not recorded as a historic site.

Isolated pieces of historic debris, including rusted tin cans and bits of metal, are widely scattered across most of the project area. A rock cairn is located on top of the ridge to the northeast, but is outside the project area.

An isolated projectile point was found in the project area southwest of the interstate highway. An intense investigation revealed no additional indication of cultural activity.

## 4.13. TRAFFIC

### 4.13.1. Existing Traffic Conditions

The affected environment with respect to traffic is the portion of Helena generally bounded by Prospect Avenue on the north, Montana Avenue on the west, I-15 on the east and the Jefferson County line on the south. Based on the highway functional classification contained in the Helena Transportation Plan 1981 Update(24), the Eleventh Avenue - Prospect Avenue couplet is designated as the only principal arterial in the study area. Broadway, Colonial Drive, Eleventh Avenue east of Fee Street, Montana Avenue and Lamborn Street are classified as minor arterials. Collector streets in the area include: Winne Avenue; California Street; Sanders Street; Sixth Avenue, west of Sanders; and Montana Avenue and Lamborn Street, south of Broadway. The Saddle Drive - Beltview Drive - Oaks Street loop is also considered to be a part of the major street network; however, the loop has not been functionally classified.

Traffic surveillance counts are taken periodically within the Helena urban area by both the City of Helena and the Montana Department of Highways. In addition, the Department of Highways maintains a permanent traffic counter on Montana Avenue near Billings Street. The traffic surveillance counts, which are taken at least once per year over a one-to-three-day period, are adjusted to annual average daily traffic by applying factors obtained through analysis of the permanent counter data. These short-duration "blanket" counts provide an approximation of traffic trends at a particular location. The accuracy of the counts are typically within ten percent of actual traffic volumes for an urban area such as Helena.

The permanent traffic counter on Montana Avenue provides information concerning annual traffic variations within the City of Helena. Figure 4-3 graphically depicts the traffic growth within the Helena area from 1961 through 1984. As indicated by the figure, traffic volumes peaked during 1976-77 and significant declines in traffic occurred during the oil embargo of 1974 and

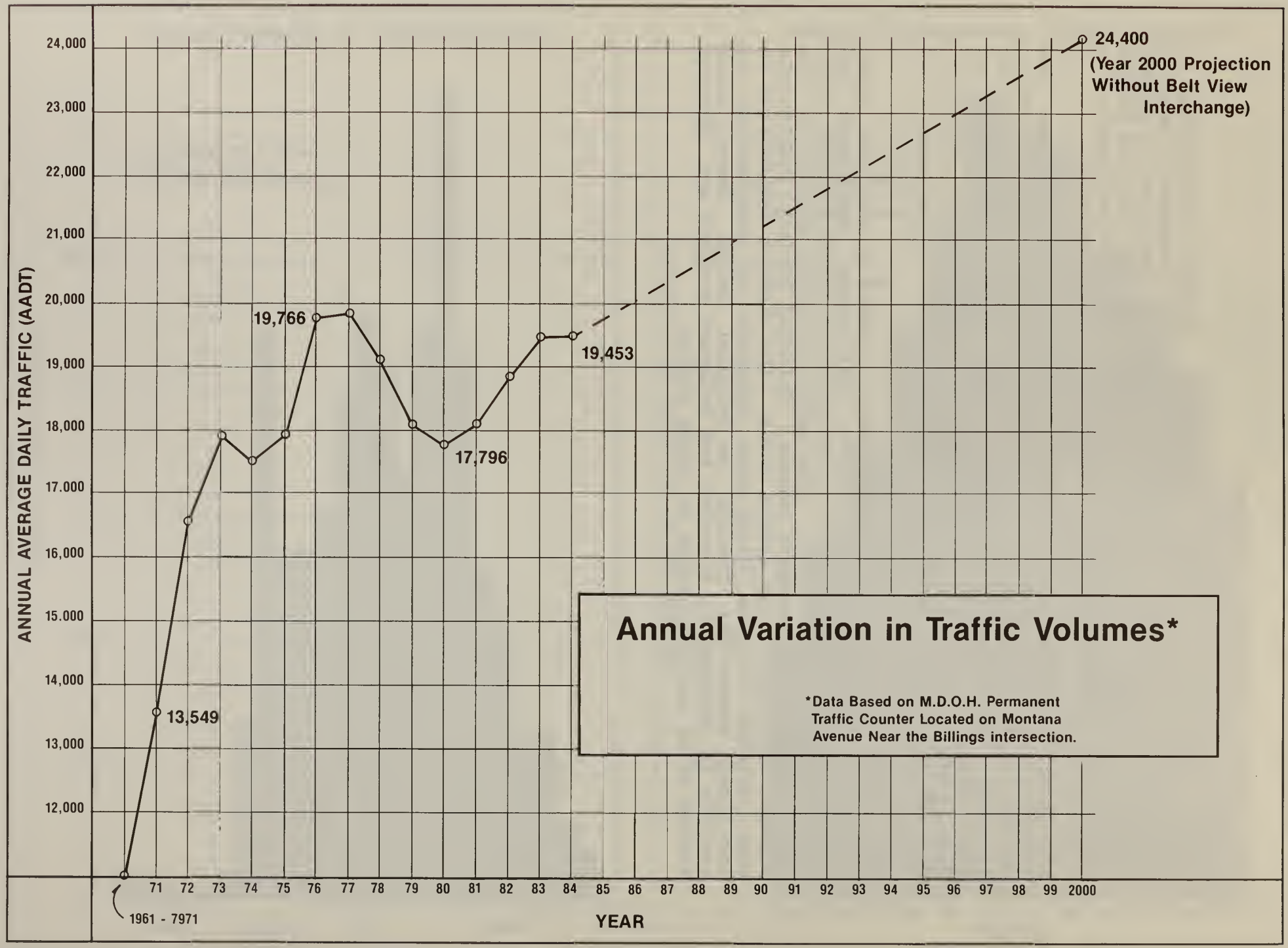

ANNUAL AVERAGE DAILY TRAFFIC (AADT)
24,000
23,000
22,000
21,000
20,000
19,000
18,000
17.000
16,000
15.000
14,000
13,000
12,000
24,400
(Year 2000 Projection
Without Belt View
Interchange)
19,766
19,453
17,796
13,549
71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 2000
1961 - 7971
YEAR
Annual Variation in Traffic Volumes*
*Data Based on M.D.O.H. Permanent
Traffic Counter Located on Montana
Avenue Near the Billings intersection.

FIGURE 4-3

during the recession in the late 1970's. Monthly variations in traffic can also be established from the permanent traffic counter data. Figure 4-4 shows the monthly fluctuation in Helena traffic during 1984. It is notable that the peak traffic period typically occurs from June through August, with January being the month with the least vehicle travel.

The hourly variations in traffic volumes for the study area are contained in Figure 4-5. This data represents actual traffic counts taken in mid-April, 1985, on Colonial Drive north of Broadway. The volume fluctuations at this location are typical of most urban areas since well defined peak hours occur around 8 a.m., Noon, and 5 p.m. The peak hour traffic on Colonial Drive occurred between 4 and 5 p.m. and represented approximately 11% of the total traffic for the day.

The existing traffic volumes for major streets within the study area are presented in Figure 4-6. This data represents the average daily traffic that occurred on these streets during 1984. As indicated by the figure, the majority of the traffic in the area is carried by Eleventh Avenue, Colonial Drive, California Street, Broadway, and Saddle Drive. The traffic composition on most streets in the study area consists of residential or localized commercial traffic on Colonial Drive. Heavy truck traffic is confined to Eleventh and Prospect Avenues and Montana Avenue which are designated as truck routes.

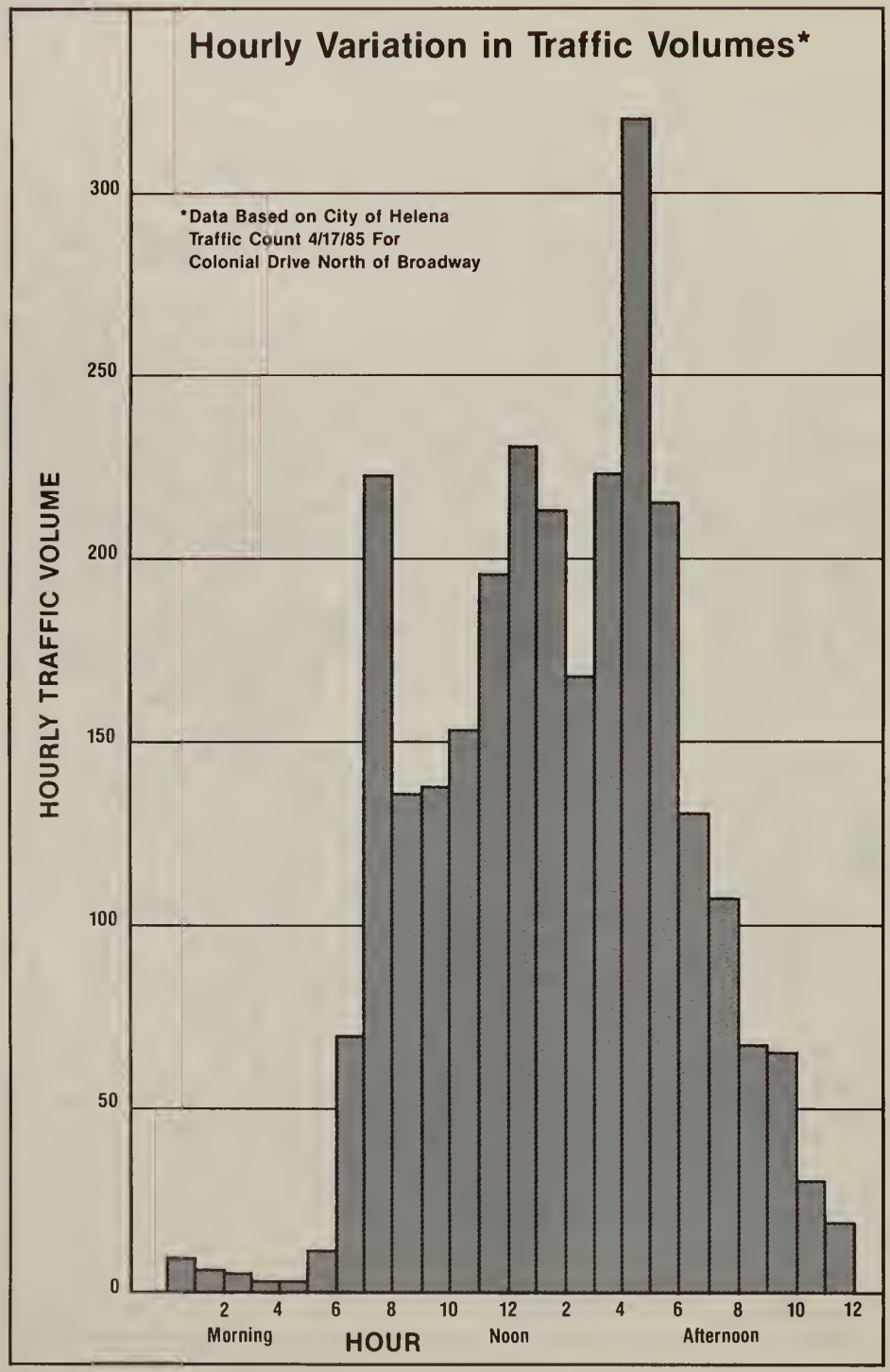



FIGURE 4-5

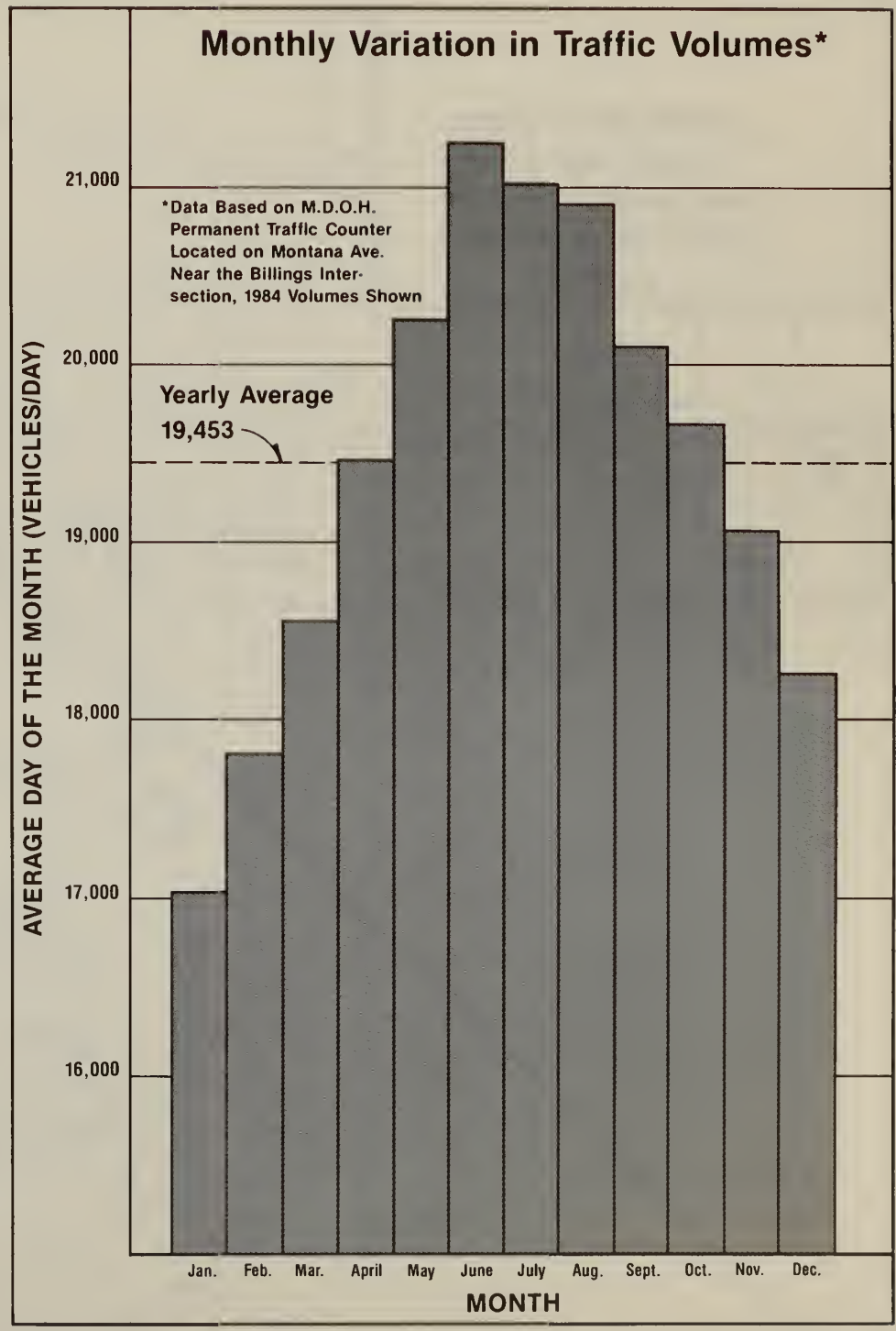



FIGURE 4-4

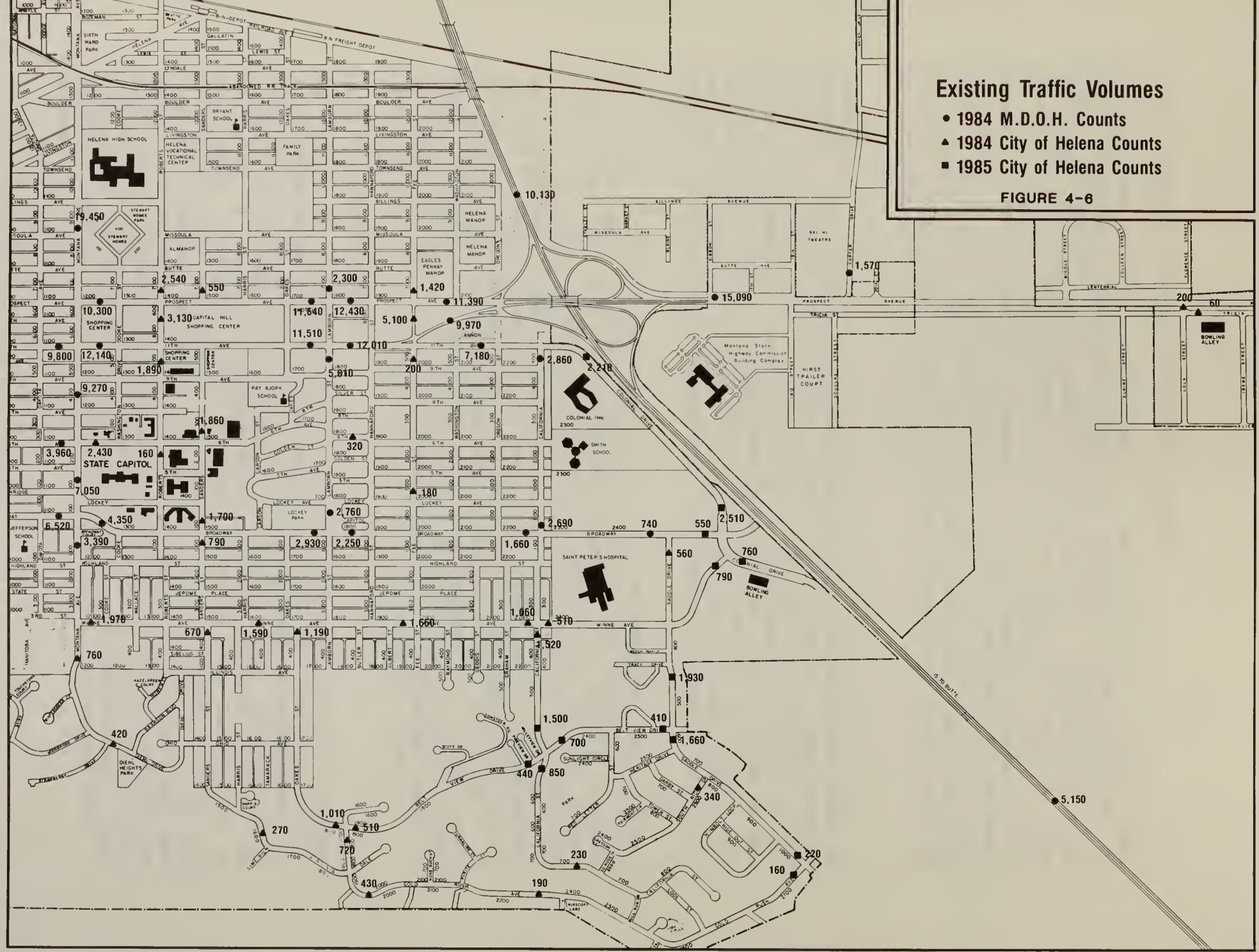

Existing Traffic Volumes
• 1984 M.D.O.H. Counts
▲ 1984 City of Helena Counts
■ 1985 City of Helena Counts
HELENA HIGH SCHOOL
CAPITAL HILL SHOPPING CENTER
STATE CAPITOL
SAINT PETER'S HOSPITAL
COLONIAL INN
BRYANT SCHOOL
JEFFERSON SCHOOL
SIXTH WARD PARK
OHEM HEIGHTS PARK
BOWLING ALLEY
HIRST TRAILER COURT
Montana State Highway Commission Building Complex
B-N DEPOT
B N FREIGHT DEPOT
ABANDONED RR TRACK
TO BUTTE
10,130
9,450
2,540
550
2,300
1,420
11,390
15,090
1,570
200
60
10,300
3,130
11,640
12,430
5,100
9,970
11,510
12,010
9,800
12,140
1,890
7,180
2,860
2,210
5,810
9,270
1,860
320
3,960
2,430
160
7,050
180
2,760
4,350
1,700
2,690
740
550
2,510
6,520
3,390
790
2,930
2,250
1,660
560
760
790
1,060
510
1,660
1,970
670
1,590
1,190
520
760
1,930
1,500
410
1,660
700
420
440
850
340
1,010
510
270
720
230
220
160
430
190
5,150

FIGURE 4-6

### 4.13.2. Pedestrian and Bicyclist Traffic

General observations of pedestrian and bicyclist traffic were made throughout the study area and indicated a regular flow of young pedestrians and bicyclists between Smith School on California Street and adjacent neighborhoods. Observations also indicate that some residents of the area walk or bicycle to work at the Capitol complex or to shop at commercial areas along Eleventh and Prospect Avenues. A noticeable increase in pedestrian/bicycle traffic occurs on local residential streets from 3 to 5 p.m. during the school year as students travel home or recreate after school. Jogging enthusiasts regularly utilize Broadway and Colonial Drive to access undeveloped areas south of the proposed interchange location.

Pedestrian facilities in the area are limited to sidewalks. In general, the older established residential neighborhoods west of California Street do not have sidewalks; however, developments south of Winne Avenue and east of California typically have concrete sidewalks. Several bikeways have been designated in the Helena Bikeway Plan, which was included as a part of the Helena Comprehensive Plan.(21) Area streets serving as parts of designated bikeways include: Colonial Drive; Ninth Avenue; the eastern portion of Sixth Avenue; and Lamborn Street, south of Broadway.

The most notable deficiency in the pedestrian and bicycle facilities in the area is the lack of any means to cross Interstate 15. The only existing crossing is a narrow walkway consisting of an eighteen inch safety curb on the Capitol Interchange; however, this facility is too far north to be considered useful for residents in the area of the proposed interchange. The lack of a proper crossing may result in unsafe and unpredictable crossings of the Interstate. It should be noted that grade school children living east of I-15 and attending Smith School have at times resorted to crossing under the roadway in large storm drainage culverts. Development of a pedestrian/bicycle crossing of I-15 south of U.S. 12 was identified as a recommended improvement project in the Helena Transportation Plan 1981 Update.(24)

### 4.13.3. Traffic Safety

The City of Helena Engineering Department maintains accident "pin" maps which identify the location of traffic accidents that occurred on the city street system during each calendar year. A review of the maps for the past five years (1980 through 1984) indicates a random accident occurrence on streets within the study area. The only major accident clusters were identified at the signalized intersections along the Eleventh Avenue and Prospect Avenue couplet. Based upon data developed for the Helena Transportation Plan, 1981 Update,(24) typical accident rates for these intersections range from 0.42 accidents per million vehicles entering (ACC/MVE) at Eleventh Avenue and Montana to 1.21 ACC/MVE at Eleventh Avenue and Fee Street. These accident rates are similar to other urban intersections in Helena.

## 4.14. AGRICULTURE AND IRRIGATION

Currently, land northeast of the interstate highway at the interchange location is being used for grazing and land southwest of the interstate is not being used for agricultural purposes. There is no irrigation of farmland in or near the project area.

There are three predominant agricultural soil types in the area affected directly or indirectly by the proposed interchange, as classified by the U.S. Department of Agriculture, Soil Conservation Service(25):

1. Musselshell-Crago Complex, 2 to 8 percent slopes.

2. Crago-Musselshell Complex, 4 to 25 percent slopes.

3. Roto-Pensore-Crago, 15 to 45 percent slopes.

None of the soil types found in the project area constitute prime farmland, unique farmland or farmland of statewide or local importance.(26)

## 4.15. REFERENCES FOR CHAPTER 4

Copies of all references listed below are available for inspection at the offices of Morrison-Maierle, Inc., 910 Helena Avenue, Helena, Montana 59601.


1. Boyer, James. Boyer Consulting, Population and housing estimates. April 1985.

2. U.S. Department of Commerce. Census of Population, Montana, 1950-1980.

3. Helena-Lewis and Clark County Areawide Planning Organization. Lewis and Clark County Comprehensive Plan, 1983.

4. Robert Peccia and Associates. Southeast Helena Comprehensive Plan, 1981.

5. U.S. Department of Commerce. Census of Retail Trade, Montana, 1972, 1977, and 1982.

6. U.S. Department of Commerce. Census of Wholesale Trade, Montana, 1972, 1977, and 1982.

7. U.S. Department of Commerce. Census of Service Industries, Montana, 1972, 1977, and 1982.

8. U.S. Department of Commerce. County Business Patterns, Montana, 1970-1983.

9. Simkins, Dave. Capital Hill Merchants Association, personal communication, May 1985.

10. Grossberg, Phil. Downtown Merchants Association, personal communication, May 1985.

11. U.S. Department of Commerce. Census of Population and Housing, Montana, 1980.

12. Montana Department of Commerce. County Profiles, Lewis and Clark, Jefferson, Broadwater, and Powell Counties, 1983.

13. Campbell, John. Helena School District 1, personal communication, May 1985.

14. U.S. Department of Commerce. Census of Population and Housing, Selected Areas in Montana, Block data, 1980.

15. Lewis and Clark County Assessor's Office. Taxable values and mill levies, personal communication, May 1985.

16. Robert Peccia & Associates, South Hills Planning Study, 1985

17. U.S. Department of Transportation, FHWA, Noise Standards and Procedures, PPM 90-2, February 1973 and Noise Abatement Criteria:, Federal Aid Highway Program Manual, Volume 7, Chapter 7, Section 3, August 9, 1982.

18. U.S. Department of Transportation, FHWA, User's Manual: Highway Traffic Noise Prediction Model SNAP 1.0, RD-78-139, January, 1979.

19. Karen Zackheim, Department of Environmental Studies, University of Montana, Wildlife Study, No Date.

20. Brewster, Wayne G., Fish and Wildlife Service, U.S. Department of the Interior, letter dated March 31, 1985.

21. Robert Peccia & Associates, Helena Comprehensive Plan, 1981

22. Wesplan Corporation, The Crossfire Master Plan, April 1979.

23. Historical Research Associates, Cultural Resource Inventory of the Proposed Beltview Interchange Near Helena, Montana, May 16, 1985.

24. Robert Peccia & Associates, Helena Transportation Plan, 1981 Update, March 30, 1982.

25. U.S. Department of Agriculture, Soil Conservation Service and Montana Agricultural Experiment Station, Soil Survey of Helena Valley, No Date.

26. U.S. Department of Agriculture, Soil Convervation Service, Farmland Conversion Impact Rating for Beltview Interchange, September 1985.

27. U.S. Environmental Protection Agency, Helena Valley, Montana Area Environmental Pollution Study, January 1972.

# 5. ENVIRONMENTAL CONSEQUENCES

## 5.1. SOCIOECONOMIC IMPACTS

### 5.1.1. Population Impacts

#### 5.1.1.1. Construction Impacts

Construction of the Beltview Interchange would likely be completed by a mix of workers from within and outside the Helena area. Employment of non-local people would cause a short-term increase in the local population. But even if the work force were composed entirely of people from outside the Helena area, the presence of non-local workers and their families would not have an important effect on the area's population. The three month period of peak construction employment could be expected to bring a maximum of 60 people to the Helena area.

#### 5.1.1.2. Long-term Impacts

Development of the Beltview Interchange could have a minor affect on the long-term population growth in the Helena urban area. This growth would happen if the interchange contributed to increases in tourism or the development of other travel-oriented economic activity that would otherwise not occur in the area. The interchange is not expected to attract any major basic employers, who could cause significant population increases in the Helena area.

With or without the interchange, the Helena urban-area population is expected to grow steadily through the end of the century. Based on forecasts contained in the Lewis and Clark Comprehensive Plan, area population is predicted to grow from 48,500 in 1985 to 63,500 by 2000.(1) Extending trends to 2005, the urban population would be 69,500.

Table 5-1: Population Forecasts Helena Urban Area
1980-2005

| Year | Population |
|---|---|
| 1980 | 43,800 |
| 1985 | 48,500 |
| 1990 | 53,500 |
| 1995 | 58,000 |
| 2000 | 63,500 |
| 2005 | 69,500 |
| Total Change 1985-2005 | +21,000 |

*Forecasts include population projections for northern Jefferson County, which is assumed to capture the same portion of urban-area growth as it did during the 1980-1985 period.

Areas outside the City of Helena are expected to continue attracting the majority of population growth in the urban area. Based on trends occurring between 1980 and 1985, the Helena Valley and other unincorporated areas of southern Lewis and Clark County, plus northern Jefferson County will attract two-thirds of the net increase in population. The remainder of net population growth will occur within the City of Helena. The City of East Helena is not expected to experience a significant population change.

Table 5-2: Population Forecasts Helena Area including Helena, Southern Lewis and Clark County and Northern Jefferson County
1980-2005

| Year | Helena | S. Lewis and Clark County | N. Jefferson County |
|---|---|---|---|
| 1980 | 23,938 | 17,114 | 2,758 |
| 1985 | 25,500 | 19,500 | 3,500 |
| 1990 | 27,000 | 22,000 | 4,000 |
| 1995 | 28,500 | 24,500 | 5,000 |
| 2000 | 30,000 | 27,000 | 5,500 |
| 2005 | 32,000 | 30,000 | 6,500 |
| Total Change 1985-2005 | +6,500 | +10,500 | +3,000 |

*Forecast for southern Lewis and Clark County includes East Helena, but not Helena.

Southeast Helena can be expected to continue attracting the largest share of new residential development within the city. Assuming that the area captures the same portion of city and urban-area growth as it did between 1980 and 1985, its population will increase from 5,000 in 1985 to 8,700 by 2005.

Table 5-3: Population Forecast Southeast Helena
1980-2005

| Year | Population |
|---|---|
| 1980 | 4,100 |
| 1985 | 5,000 |
| 1990 | 6,000 |
| 1995 | 6,800 |
| 2000 | 7,600 |
| 2005 | 8,700 |
| Total Change 1985-2005 | +3,700 |

Significant new settlement in southeast Helena is likely to occur regardless of interchange development.(2) The area is designated for a mix of low density, and medium to high density residential

development by the city's Comprehensive Plan. The Areawide Planning Organization has prepared the Southeast Helena Comprehensive Plan and the South Hills Plan to better manage anticipated sizable residential development in this area. Major landowners in the area are actively marketing vacant land for residential development. Large parcels of vacant land are already subdivided, and subdivision of other area land is planned for the near future.

Interchange development could also influence the long-term distribution of population in the urban area. By improving access to and from land areas south of the interchange site, residential development in these areas becomes more feasible. Limited accessibility and the absence of adequate water are constraints to residential development south of Helena on both sides of Interstate 15. Should these obstacles be overcome, the area might attract some new settlement away from other parts of the Helena urban area. There is considerable land already available for residential development in the Helena area. Development in the City of Helena, the Helena Valley, the foothill areas and northern Jefferson County is expected to continue attracting significant new settlement whether or not the interchange is constructed.

### 5.1.2. Economic Impacts

#### 5.1.2.1. Construction Impacts

Construction of the Beltview Interchange would cause minimal disruption of existing economic activity in the vicinity of the construction site. Businesses along Colonial Drive could be inconvenienced by the passage of construction vehicles.

Short-term economic benefits within the Helena area would result from personal and business income generated by project construction. The total construction cost for the project is estimated at $1.5 million. The interchange construction contract could be let to a single contractor, or it could be let in two parts, with the construction of the bridge over I-15 being a separate contract. Bridge construction is expected to take six months with project earth work and construction of exit and entrance ramps requiring three months. Bridge and ramp development would occur simultaneously, with the entire construction effort taking six months.(3)

An estimated 12 to 17 workers, including supervisory personnel, would be employed to build the interchange project. The peak construction force would be 20 to 22 workers and would occur during the decking of the bridge. The necessary work force is expected to include carpenters, equipment operators, iron workers, cement finishers, welders and laborers--plus engineers and other supervisory personnel. An estimated 90 worker-months would be required to complete the project.(4)

Skilled and semi-skilled construction workers are available in the Helena Labor Market Area (LMA). However, there are no experienced builders of major bridges among Helena contractors;

therefore, bridge construction would likely be completed by builders from Billings or Great Falls. Some workers from outside the Helena area would likely be hired for bridge construction.

Local contractors do have experience in other aspects of project construction. If the non-bridge contract was let to a local builder, it is expected that mostly local workers would be hired to complete these tasks.

Payroll and worker benefits for the project are estimated at 25 percent of the total construction costs (5); it is expected that workers would earn $375,000. The wage rate for construction workers would average about $13.00 per hour.(4) Employment of local workers would cause the direct economic benefits to Helena area households to be greater than if persons from outside the Helena area were hired to construct the project. A portion of the project's engineering and contingencies budget would be used to pay wages and salaries of Montana Highway Department personnel who are also employed in Helena.

Major inputs for the construction of the interchange include concrete, reinforcing steel, gravel, bituminous material, fuel, guard rails, signs and paint. Concrete is expected to be purchased in Helena. Other inputs, such as fuel and paint, could also be purchased locally. These purchases would create additional income for local businesses and their employees.

Local workers could be expected to spend nearly all their earnings within the Helena area. Non-local workers could be expected to spend up to 40 percent of their earnings within the Helena area.(6) The circulation (the multiplier effect) of worker earnings within the local economy would create additional income for other Helena businesses and their employees. Similarly, wages paid and local purchases made by Helena-based suppliers of construction inputs would create additional income for local businesses and their employees.

Few, if any, service-sector jobs would be created by the derivative effects of project construction. The small size of the construction work force, the short construction period, and the expectation that derivative income effects would be widely dispersed throughout the local economy serve to discourage service-sector businesses from hiring additional employees. Most businesses would be expected to work harder while maintaining existing employment levels.

Table 5-4: Estimated Local Income Effects
Beltview Interchange Construction

| | |
|---|---|
| Local wage and salary earnings | $250,000 |
| Worker expenditure derivative effects | 305,000* |
| Local value-added construction inputs | 225,000 |
| Derivative effects construction inputs | 225,000 |
| Total income effects | $1,005,000 |

*includes estimate of effects of expenditures by non-local construction workers.

Table assumes average work force of 15: two-thirds of workers from Helena area. Non-local workers are assumed to spend 40 percent of earnings in Helena (Mountain West Research, Construction Worker Profile, 1975). Local value added for total construction inputs is assumed to be 20 percent. The local income multiplier is assumed to be 1.01 (Chalmers, Anderson, Beckhelm and Hannigan, Empirical Model of Spatial Interaction in Sparcely Settled Regions, 1977).

5.1.2.2. Long-term Economic Effects

The presence of the Beltview Interchange would influence patterns of commercial development in the Helena urban area. The interchange could cause economic activities to develop that would otherwise not occur in Helena; it could also effect the distribution of commercial activities in the area.

Access to I-15 would make adjacent land on both sides of the interstate highway attractive locations for travel-oriented businesses. Motels, truck stops or service stations, restaurants and convenience stores could open near exit and entrance ramps. Without an interchange, land in the Colonial-Beltview Drive area and east of the interstate would offer little attraction to businesses catering to travelers.

The interchange would also enhance the ability of adjacent lands to support urban area and regionally oriented retail and personal service businesses. The interchange would improve access to the Colonial-Beltview Drive area, to land on the east side of I-15 and would provide easier access to the commercial area from residences and activity centers located in north and west Helena, the Helena Valley, East Helena, northern Jefferson County, and the Helena regional trade communities of Townsend and Boulder.

Without the interchange, many of the retail and personal service businesses developing in the Colonial-Beltview Drive area would likely be scaled to the local area markets created by the population of southeastern Helena. Offices and professional service activities are likely to continue locating in the area,

and would eventually occupy land that, with an interchange, would be occupied by consumer-oriented businesses. Without the interchange, slower development of the commercial areas could be expected.

To take advantage of commercial development potential close to the interchange, the owner of land west of the interstate is negotiating a land-use exchange with the City of Helena. The exchange would transpose the land use designations of contiguous parcels; switching 30 acres of residential land use with 29 acres designated for commercial use. The exchange would allow land designated for commercial development to directly front the interchange.

Approximately 50 acres of range land located east of I-15 would also be included in the Special Improvement District that would be established to pay for the interchange. The absence of roads and other essential public services currently discourages intensive development in this area. The Helena Comprehensive Plan has designated the land east of I-15 for medium density residential and neighborhood commercial development. Without an interchange, the area likely would not be able to support commercial development for many years.

Private developers of land around the interchange site suggest that light industrial uses might also take place east of I-15.(7) Without highway access this area would not have location advantages over other possible sites for light industrial development in the Helena area.

Effects on Area Economic Base

Additional commercial development attributable to the interchange would have a slight positive effect on the Helena area economic base. Benefits would include small increases in the number of jobs and the earnings of area residents.

Few serious proposals for commercial development near the proposed interchange have been instituted. Development of a major motel-convention center is being considered in the vicinity of the project site. In addition to capturing a share of Helena's expanding market, an aggressively marketed motel-convention center could potentially attract additional convention business and other traveler visits to the Helena area(9). The Helena Chamber of Commerce also believes that the addition of a major convention facility would enhance the area's ability to attract more and larger conventions.(10)

If a major motel-convention center or other travel-oriented businesses increase expenditures by visitors to the Helena area, then interchange development would help expand the area's economic base. Circulation of additional expenditures within the local economy would create additional income and jobs within the area.

Commercial development near the interchange is not likely to have

a significant impact on Helena area regional trade. Few people live in the geographic areas potentially influenced by expanded commercial development southeast of Helena.

## Increased Competition

The Beltview Interchange would enhance the competitiveness of new retail and service businesses locating in the Beltview-Colonial Drive area by improving local and regional access to the area. In addition, the interchange would allow commercial land development east of Interstate 15, which would otherwise not occur in the near future.

The Helena area local business associations acknowledge that expanded commercial development in the Beltview Interchange area would mean additional competition for existing businesses--a situation that could create problems for some establishments. Local businessmen suggest that the Helena retail sector is currently overbuilt for the size of existing area markets.(11)(12)

Travel-oriented businesses, such as motels and fast-food restaurants on Prospect and 11th Avenues, could expect similar businesses to locate at the interchange. One local motel operator expressed specific concerns about the Helena area's capability to support one or two new motel facilities.

Local business association spokespeople felt that the effects of increased competition on Helena's major retail areas generally would be counterbalanced by the additional business activity attracted to the Helena area by a new convention facility and additional travel-oriented businesses. Downtown Helena and Capitol Hill Mall merchants expect to benefit from the revenue brought into Helena by the Beltview Interchange. (10)(11)(12)(13) Both the Helena Improvement Society and the Helena Chamber of Commerce have passed resolutions supporting the project.

Irrespective of whether the Beltview Interchange is developed, the Helena area could experience substantial new commercial development in the next 10 to 20 years. Based on county Comprehensive Plan population and economic projections, the number of retail establishments in the Helena urban area could experience a net increase of 30 percent by 2005. Personal and business-service enterprises also could expect substantial growth.

Table 5-5: Projected Retail Sales and Establishments with Payrolls
Helena Urban Area
1982-2005
(in thousands of 1982 dollars)

| Year | Total Sales | Number of Establishments |
|---|---|---|
| 1982 | $220,000 | 305 |
| 1985 | 235,000 | 325 |
| 1990 | 245,000 | 340 |
| 1995 | 270,000 | 365 |
| 2000 | 290,000 | 391 |
| 2005 | 330,000 | 440 |
| change | +110,000 | +135 |

Projections are based on per capita expenditures in 1982. Ratio of establishments to sales is assumed to decrease as total sales increase. This assumption is based on trends in Billings, Missoula and Great Falls. Projections are only for establishments with payroll.

Business Location

The interchange project is likely to have important effects on the location of new commercial development in the Helena area. In recent years the City of Helena has greatly increased the amount of undeveloped land available for commercial businesses by approving the development of four regional-scale shopping centers--including one on Colonial Drive, north and west of the proposed interchange. Intensive commercial development has yet to take place in any of these areas. The interchange, however, would make the Colonial Drive site more attractive. It could draw new investments away from rival shopping centers and from Helena's existing commercial areas.

Displacement of Existing Economic Activities

Development of the interchange facilities would directly displace about nine acres of range land. Additionally, the 50 acres of range land located on the eastside of the interchange site would be converted to commercial land uses. The land has not currently being used by cattle. Total displaced range land would reduce potential county cattle production by less than three animal units per year.

5.1.3. Housing Impacts

5.1.3.1. Construction Impacts

Helena's 15 existing motels (905 rooms) and three travel-trailer facilities are sufficient to accommodate the maximum influx of 22 non-local construction workers and their families.

5.1.3.2. Long-term Housing Impacts

No existing housing units near the interchange would be displaced by project development.

The Beltview Interchange would have little impact on the future number of units, mix, or cost of housing in the Helena area. The small net increase in population growth attributable to economic activities developing near the interchange could cause a slight additional increase in local housing demand.

The landowner on the west side of the proposed interchange site intends to develop approximately 29 acres for residential uses. This land is part of a proposed land use exchange, with land use designations of adjoining commercial and residential parcels being switched.

Preliminary plans for the proposed residential area call for a mixture of detached single-family homes and multi-family structures. The land would probably be developed in this way regardless of the interchange being developed. This pattern already occurs on nearby land in southeastern Helena. With the exception of commercial areas, the Helena Comprehensive Plan designates land west of the interchange site for medium to high density residential development.

5.1.4. Social Impacts

5.1.4.1. Construction Impacts

Construction of the Beltview Interchange would have little impact on human activity near the construction site. The land within and adjacent to the proposed interchange is currently uninhabited. The site is of a sufficient distance from existing residences and businesses that noise, dust and construction activities should not interfere with residential or work activity patterns.

The unpaved portion of Colonial Drive west of the interstate is used by joggers and hikers; construction activities could have minor impacts on these users.

5.1.4.2. Long-term Social Impacts

Based on public comments, the most important social concern related to the Beltview Interchange project is its possible influence on motor vehicle traffic on residential streets in southeastern Helena. Traffic on sections of residential streets in this area already exceeds what is considered residential (local street) volumes in Helena.(14) Residents fear that development of the Beltview Interchange will further increase area traffic problems. Noise, dust, loss of privacy, safety of children, inconveniences of living on busy streets, and the devaluation of property are issues that concern the area residents.

Future traffic volumes on southeast Helena residential streets will increase substantially regardless of whether the interchange is developed. Some individuals and households can be expected to be more sensitive to traffic impacts than others. Families with young children are often uncomfortable living on busy streets.(15) The absence of sidewalks in sections of southeast Helena means that edges of streets are often used as walking areas. This condition may serve to increase parent concern over child safety.

Older people are often more vulnerable to the inconveniences caused by living on a busy street.(15) For example, poorer vision and hearing, slower reflexes, and limited mobility make it difficult for some older people to walk across busy streets or to drive onto busy streets from driveways.

As traffic volumes increase some people, uncomfortable with living on busy streets, may move and established neighborhood relationships would change. New residents are likely to be different demographically; mainly because many families with young children are reluctant to live on busy streets. The remaining people will adapt their lives to changing traffic conditions, though some may harbor long-term resentment over what they perceive as an adverse effect on the quality of their lives.

Demographic and lifestyle characteristics of people living in multi-family housing often make these people less susceptible to the adverse effects of higher volume traffic. Many people living in multi-family housing are highly mobile young adults without children. Multi-family housing is often a transitional land use between busy streets and lower density residential areas.

Future Conditions

The magnitude of future traffic-related social impacts in southeast Helena will be determined by volumes of traffic carried by area residential streets. The recent pattern of increasing traffic on local streets results mainly from residential growth in the area, use of local streets by commuters from outside the area to access and leave the state capitol complex, and the absence of non-residential streets to handle increasing traffic volumes.

Since 1980, the development of approximately 330 new homes in the southeast part of the city has increased locally generated traffic by an estimated 3,000 vehicle trips per day. In addition, congestion on 11th and Prospect Avenues, during peak traffic periods, encourages commuters to use residential streets north and east of the capitol complex. St. Peter's Hospital and the gradual development of commercial land along Colonial Drive also has contributed to cross-town traffic through residential areas.

In the future, population growth and commercial development planned for southeast Helena will substantially increase traffic above existing levels. Residential growth will occur west of I-

15, irrespective of whether the Beltview Interchange is developed. Based on population and housing mix projections for the area, new residential development will increase locally generated traffic by 7,000 average daily trips by the year 2000 and by 10,000 average daily trips by the year 2005.

When fully developed, commercial land in the Colonial-Beltview Drive area could attract an additional 9,000 vehicle trips per day (some of these trips are the same trips attributed to new residential development in southeast Helena). Many of the non-local trips could be routed to and from the commercial area via Colonial Drive, Prospect and 11th Avenues, avoiding residential areas. Residents of southern areas of Helena, however, can be expected to cut through residential areas to access the commercial site.

Non-local commuter use of residential streets could also increase. General increases in traffic because of population growth and the new state Department of Natural Resources and Conservation building in the capitol complex will increase congestion on 11th and Prospect Avenues--encouraging motorists to use residential streets to access the capitol area.

The Montana Highway Department's traffic model was used to project general traffic volumes in southeastern Helena for the year 2000. With or without the Beltview Interchange, the traffic model projects sizable volume increases for several southeast Helena residential streets. By 2006, sections of Broadway, California, Lamborn and Beltview Drive are projected to carry approximately 5,000-7,000 vehicle trips a day. Sections of Winne Avenue and additional sections of Beltview Drive and California are projected to carry 2,000-4,000 trips. In addition, other local streets may experience sizable relative increases in traffic, but volumes are expected to remain residential in character.

## Incremental Effects of the Interchange

Development of the Beltview Interchange would alter some future travel patterns within southeastern Helena. On sections of residential streets, the interchange could contribute increases or decreases in traffic. In these areas, the interchange would contribute incremental changes in the social impacts that will occur. For most of southeast Helena the interchange is projected to cause little net change in overall traffic on area streets or in the traffic related social impacts that are likely to occur in this area.

Traffic volumes on some residential streets would increase immediately after the interchange is completed, as commuters from northern Jefferson County begin to use the Beltview Interchange to access the capitol area. Thereafter, the interchange's influence on traffic volumes on residential streets would be expected to change gradually, as urban area population growth and local residential and commercial development occurs.

In the long term, much of the increased traffic on residential streets resulting directly and indirectly from interchange development could be counterbalanced by the redirection of local traffic generated by new residences built in southeast Helena.

The Beltview Interchange would allow people who will live in future residential developments paralleling the interstate to use it instead of local streets to access other parts of Helena. It would be easier for people to use the interstate to get to many of the activity centers in the east, west and northern parts of the urban area. This effect should become more evident as urban area population growth and expansion of employment and commercial activities fill in vacant land along I-15 and in the north and east Helena Valley.

The largest net increase in traffic in southeast Helena resulting from interchange development is expected to occur on Beltview Drive between California and Saddle Drive. The area is currently undeveloped, but is expected to eventually be developed for multi-family housing.

The next largest net increase in traffic is projected to occur on Broadway in the vicinity of St. Peter's Hospital and Cooney Convalescent Home. The increase would also be about 1,300 vehicle trips per day. This is not a residential area susceptible to traffic-related social impacts.

One residential section of Broadway that could experience a perceptible increase in traffic-related social impacts is located from west of California Street to the capitol area. Traffic on this low density residential section of Broadway is projected to increase by an additional 400 to 900 vehicle trips a day as a result of the existence of a Beltview Interchange. Interchange development is projected to contribute from 5 to 15 percent of total traffic on this section of the street.

With the interchange, traffic on the east end of Winne, behind the hospital, is projected to increase by 500 vehicle trips a day. The interchange would be responsible for 20 to 25 percent of traffic in this area. It is not a residential area. In the residential areas west of California Street, effects of projected traffic volumes on Winnie would not be significant.

Residents of California Street could be beneficiaries of the project. From Winne to 11th Avenue, the interchange is projected to reduce average daily traffic volumes by 400 to 700 trips by rerouting traffic generated by new development south of town onto I-15. Less traffic would be routed in front of Smith School as a result of the interchange.

Residents of Lamborn Street could also experience reductions in traffic volumes and impacts because of the improved traffic flows on 11th and Prospect.

Residents of Sanders, Oakes and Saddle Drive should experience little change from the project. The interchange is not expected to noticeably affect traffic volumes outside of southeast Helena.

The project should have no major traffic related social impacts elsewhere in the urban area.

Colonial Drive would experience a major reduction in traffic volumes as a result of interchange development. No residential land uses currently exist along this roadway. It is possible that some multi-family residential development could develop in the future.

Displacement Effects

Loss of the recreational and aesthetic benefits of open space west of the interchange is an inevitable effect of planned development of this area. It will occur whether or not the interchange is developed. The interchange would also contribute to loss of open space east of I-15. This land would not likely be as rapidly or intensively developed in the absence of the access provided by the interchange.

5.1.5. Property Value Impacts

Private developers would be willing to finance the Beltview Interchange because they feel interstate access would enhance the market value of their nearby property. An interchange would be expected to make the surrounding area more attractive for retail development by greatly improving customer access to the area.

Land west of I-15 is estimated to have a current market value of $1.50 to $2.00 per square foot. With an interchange, this land is estimated to sell for $4.50 to $6.00 a square foot. Land east of the interstate is currently used as range land, and would sell for less than $1.00 a square foot. With interchange development it is also estimated to sell for $4.50 or more per square foot. Interchange development is not expected to affect the market value of residential property in this area.(7)

The potential for indirect impacts on residential property values in southeastern Helena was a major public concern regarding the interchange project. Commentors expressed apprehension that interchange development would increase traffic volumes on residential streets, which would contribute to lower values for area residential property.

Three Helena area appraisers were interviewed as to the affect of traffic volumes on the selling price of residential properties in the Helena area. The appraisers acknowledged that a home on a busy street is likely to sell for slightly less than an identical home on a nearby street carrying only local traffic. The appraisers emphasized that the differences in selling prices were slight and that effects on the valuation of real property on streets with increasing traffic volumes occurred gradually. Other factors, such as general housing price inflation, individual home characteristics, neighborhood characteristics, market conditions and financing also influence the prices of Helena homes.(16)(17)(18)

Development of the Beltview Interchange could contribute

incrementally to effects of future traffic volumes on values of residential property in southeast Helena. On sections of Broadway, the interchange related traffic increases could contribute to slightly lower selling prices than would otherwise occur. By redirecting traffic off of sections of California Street, the interchange could actually reduce traffic effects on property values in this area. On both streets, the net contribution of interchange-related increases or decreases in traffic on property values would be small, relative to other factors influencing market values for residential property.

Interchange-related increases in traffic volumes on Beltview Drive would not be expected to affect the value of multi-family housing developed in this area. Prices of multi-family homes are less susceptible to the affects of traffic volumes. In other low density residential areas in southeast Helena, the interchange would not cause perceptible changes in traffic volumes and would not be expected to affect property values.

5.1.6. Property Tax Impacts

The interchange financing plan calls for creation of a Special Improvement District (SID) consisting of commercial land on both sides of the proposed interchange. Within this SID are expected to be primary and secondary assessment areas; land in the primary area would pay a higher assessment rate. The determination as to whether a parcel would be placed in the primary or secondary assessment area would be based on the degree to which commercial development would benefit from the interchange. Only areas designated for commercial development would be included in the SID.(7)

The preliminary SID plan for the area calls for the primary assessment area to include 100 acres of commercial land; 50 acres on each side of the interchange. The secondary assessment area would include 21 acres, all on the west side of I-15.

The approximately 121 acres to be included in the special improvement district is currently held by only two landowners. Existing commercial land near the interchange but outside of the SID would not be assessed, even though some of this property might accrue economic benefit from project development.

The Montana Highway Department manages state owned land on the east side of the proposed interchange site. The land is classified as surplus property by the state, and will be sold to private investors. A portion of this land may also be included in the SID.

Upon completion of project construction, ownership of the interchange would be transferred to the Montana Highway Department. As public property, the interchange would not be subject to state and local property taxes.

Development of the Beltview Interchange would remove approximately nine acres from local government and school district tax bases. This land is currently classified as range

land. At current mill levies, removal of this land would cost local governments and schools less than $100 in annual tax revenues.

Private residential and commercial development occurring on both sides of the interchange would benefit local taxing jurisdictions. Development costs for commercial land within the 121-acre SID are estimated to range from $50 million to $75 million depending on the mix of retail, service and office development that would occur. This estimate is based on typical ratios of commercial floor space to land area and development costs per square foot of commercial floor space.(19) It is also possible that light industrial land uses could be developed east of the interchange.

Preliminary plans for residential development of a 29 acre area west of the interchange call for a mix of single-family and multi-family units. Assuming this mix is the same as the mix of new housing built in southeastern Helena between 1980 and 1985, about 145 single-family homes and 180 multi-family homes would be built in the area. Using typical cost figures of $60,000 for single family homes and $30,000 per unit in multi-family structures (20), total residential construction costs in the area would be approximately $15 million.

When built, residential and commercial developments in the vicinity of the interchange could add $5-7 million to the taxable valuation of the city of Helena, Lewis and Clark County and Helena School District 1. Development would also benefit the state's university system, which imposes a six-mill levy statewide. These taxable value estimates are based on the new property tax appraisal system to be implemented by the state in 1986.

Most of the commercial development contemplated for the interchange area would occur in the Helena area with or without the project. If the Beltview Interchange is not constructed a portion of the business investment which would have been made in the Beltview area could be expected to be made elsewhere in the Helena urban area. At another location, these businesses would still be subject to local property taxes. Only development that would occur exclusively if the Beltview Interchange were to be constructed would contribute to a net increase to local tax bases.

### 5.1.7. Public and Private Service Impacts

The development of an interchange at Beltview Drive would create little demand for local public and private services. However, residential and commercial development near the interchange would require improvements to the public service delivery systems, particularly for the City of Helena. Most of the increased demand for public and private services on the westside of I-15 will occur with or without development of the interchange. Development east of I-15 probably would not happen for some time without interchange access to the area.

The residential development planned for west of the interchange could eventually house over 400 school-age children. This growth, combined with growth in other developing areas of southeastern Helena, would create a need for another elementary school in the area. Helena School District 1 is prepared to develop its vacant school site on Saddle Drive when the need exists.(21)

## 5.2. PUBLIC UTILITIES

### 5.2.1. Sewer and Water

The construction of the interchange will not directly affect sewer and water mains or treatment facilities.

Development which occurs adjacent to the project will require sewer and water service. The property owners in the area have initiated discussions with the City of Helena. It is planned that the commercial areas and some residential areas will be annexed to the city. The area will therefore have access to city water supply and sewage treatment facilities.

The city has indicated that the sewer system has the capacity to accommodate the potential development of the area. Developers would be required to construct sewer mains and other collection facilities and then, after payment of the city's sewer connection fee, would be allowed to connect to the existing City collection system.

A study of the water supply capabilities in the project area completed by Morrison-Maierle, Inc.(28) has indicated that sufficient quantities of water are available from existing and planned City water supplies but that no additional water can be supplied to the project area without construction of more water storage facilities. It will therefore be the responsiblity of developers to provide the additional storage or to participate in the financing of City administered storage construction. It will also be the responsibility of developers in the area to provide the additional water mains and other water distribution requirements for the area.

### 5.2.2. Natural Gas/Electricity/Telephone/Cable TV

The project will have no effect on the underground gas and telephone utilities adjacent to the interstate highway. The overhead power lines may require relocation or adjustment.

Natural gas, electricity, telephone and cable TV all exist in the project area and plans have been made by the developers and the utility companies to extend these services as development occurs in the interchange area.

## 5.3. FLOOD HAZARD/STORM DRAINAGE

The area adjacent to the Beltview Interchange will experience increased runoff as the area develops and vegetative cover is

replaced with less pervious surfaces such as asphalt and buildings. This change will result in shorter runoff times and higher flow during rainstorms as well as greater overall runoff. Some of the natural drainages may be restricted and replaced with culverts, storm drains, or artificial channels.

These impacts can be effectively mitigated with proper planning and design. The South Hills Planning Study(22) recommends that natural drainages be preserved by having drainage easements dedicated to the City of Helena. Also, all storm drainage facilities should be designed to handle 100-year flood flows, and detention/retention facilities should be constructed to reduce flooding peaks and for sediment deposition. Peak flows should be restricted to those flows that would occur historically through the use of these improvements.

If the recommendations of the South Hills Planning Study(22) are implemented, the increased runoff due to development should be effectively mitigated.

## 5.4. WETLANDS/FLOOD PLAINS

Since there are no wetlands or flood plains located within or near the project area, no direct or indirect impacts are expected.

## 5.5. RELOCATIONS

There are no homes, business, schools, churches or any other building or organization located within the proposed project right-of-way, so no relocations will be required.

There is one abandoned building, previously used as part of a firing range for a gun club, located within the right-of-way. The building has not been used or maintained for several years and its removal will have no impact.

## 5.6. AIR QUALITY

Traffic facilities such as roadways, interstate interchanges, or parking lots are considered indirect sources of air pollution because the facilities themselves do not generate pollutants, but they attract pollutant sources, which in this case would be automobiles and trucks. The pollutants generated by traffic are carbon monoxide (CO), oxides of nitrogen ($NO_x$), and total suspended particulates. The project area is classified as an attainment area for carbon monoxide and total suspended particulates. The project area is unclassified for nitrogen oxides.

The direct impact of building the Beltview Interchange would be an increase in both the CO and TSP concentrations in the immediate area of the interchange. The increase in concentrations, however, would be negligible when compared with the expected concentrations in other areas if the facility was not constructed.

The indirect impact of building the Beltview Interchange would be a decrease in both the CO and TSP concentrations along much of the major street network in southeast Helena. This benefit will result from the provision of more desirable traffic routes to and from southeast Helena. These more desirable routes will remove some of the traffic from the major street network and thereby reduce TSP re-entrainment and CO emissions along the network.

Because of the low traffic volumes and low background concentrations of TSP and CO in the affected Helena area, it is not expected that violations of federal and state standards would occur as a result of traffic generated pollutants if the project was constructed. Carbon monoxide concentrations, however, might be relatively elevated at several intersections of the major street network if the interchange was not constructed; these intersections would have the potential to violate CO standards.

This project is in an air quality attainment area where the State Implementation Plan (SIP) does not contain transportation control measures. Therefore, the conformity procedures of 23 CFR 770 do not apply to this project.

5.6.1. Total Suspended Particulates

Although vehicles do emit some particles via exhaust, the most important means of generation of particles by vehicles is in the re-entrainment of fugitive dust from along the roadway as vehicles pass. Particulate emissions along a length of roadway are directly dependent on the silt content of the road surface material, surface dust loading on the traveled portion of the road, the number of vehicles on the road, and the length of the roadway, and inversely dependent on the number of traffic lanes. Roadway design, maintenance practices, and type and quantity of sanding materials used during the winter months greatly affect particulate emissions.

An equation to evaluate a length of paved roadway as a source of particulate emissions was empirically developed for the Montana State Air Quality Bureau by the Midwest Research Institute.(31) The emission equation in terms of pounds of particulate generated over the length of the roadway is as follows:

$$E = 0.45\ (4/N)(S/10)(L/5{,}000)(W/3)^{0.8}\ V.M$$

where:

- E = Quantity of Particulate Emissions (Pounds/Mile)
- S = Silt content of road surface material (%)
- N = Number of travel lanes
- W = Vehicle weight (tons)
- L = Surface dust loading on traveled portion of road (lbs/mi.)
- V = Number of vehicles on the roadway
- M = Length of roadway (miles)

The silt content and surface dust loading parameters are not monitored and have not been determined for roadways in the Helena

area; for this reason the emission equation can only be used to analyze the relative particulate emission quantities. Assuming maintenance practices, surface dust loading and average vehicle weight parameters would not be affected by the construction of the interchange, the magnitude of particulate emissions will depend primarily on traffic volumes.

With the interchange in place TSP concentration would increase along those roadways with increased traffic volumes. The locations with the greatest increases in traffic volumes for the design year would be: The Beltview Interchange, the eastern connector, Interstate 15, and Broadway Avenue.

The Beltview Interchange and the eastern connector would be new traffic facilities and, therefore, new indirect sources of pollutants. The eastern connector would provide better access and, subsequently, increased usage of roads east of Interstate 15; TSP generation in this area would increase as a result of this usage.

Interstate 15 and Broadway Avenue would provide more desirable traffic routes. Utilizing the emission equations and the traffic counts for the design year, 49% less TSP would be generated daily along the interstate and 9% less TSP would be generated daily along Broadway Avenue if the facility was not constructed compared to the emission rates if the facility was constructed.

The locations with the greatest predicted decrease in traffic volume for the design year resulting from the interchange would be Colonial Drive and Eleventh Avenue. Approximately 156% more TSP would be generated daily along Colonial Drive and 105% more TSP would be generated daily along Eleventh Avenue if the facility was not constructed compared to the emission rates if the facility was constructed.

The federal primary TSP standard of 260 micrograms per cubic meter (ug/c.m.) (24-hour maximum) and 75 ug/c.m. (annual geometric mean should not be exceeded by the proposed development. The Montana TSP standard of 200 ug/c.m. (24-hour maximum) and 75 ug/c.m. (annual average) should not be exceeded by the proposed development.

5.6.2. Carbon Monoxide

Vehicle exhaust emissions and residential wood burning emissions are the two major sources of carbon monoxide in the Helena Valley. The carbon monoxide concentrations generated by a traffic facility depend primarily on vehicle mix, vehicle speed, vehicle stops and delays, and air-mixing volume. Vehicle mix is important because trucks usually generate more CO than automobiles, and newer vehicles generate less CO than older vehicles. CO generation is generally inversely proportioned to vehicle speed, i.e., an increase in average vehicle speed will show a corresponding decrease in CO concentrations; a decrease in vehicle speed or increase in vehicle stops and delays will show a corresponding increase in CO concentrations. The air-mixing volume is essentially the volume of air into which the carbon

monoxide generated will be dispersed; a larger mixing volume will show lower concentrations for the same amount of CO generated.

When evaluating the impact on air quality of an indirect source such as the Beltview Interchange, it is necessary to consider the sum of the concentrations generated by the indirect source and the background concentrations at the upwind edge of the source. It can then be determined if this sum violates federal and/or state hourly or eight-hour standards for CO. Generally, source specific contributions will dominate the total CO concentrations for the worst one-hour case while high background concentrations will dominate the worst eight-hour cases. Short-term, source specific contributions would be particularly evident during the morning and evening traffic peaks.

A CALINE 3 pollutant dispersion model was used to estimate and compare the CO impacts of each of the alternatives and examine the existing situation.(32) Data requirements for CALINE 3 include road width, design speed, percentage of heavy-duty vehicles, diurnal traffic patterns, type of intersection control, and yearly surface and upper air meteorological data. The modeled traffic network included Colonial Drive, Eleventh Avenue and Broadway Avenue; receptors were positioned along each of these roadways in the model.

CO is not monitored in the Helena area, so background concentrations have not been developed. Assuming a worst-case background concentration of 5 ppm, which is higher than would be expected at any location in Helena, one-hour federal standards were not exceeded at any of the modeled receptor positions for either of the alternatives during the design year. The model does not take into account excess CO emissions for periods of traffic delays and excessive queuing; in the event of these occurrences, carbon monoxide concentrations at intersections could be significantly higher.

If the interchange is constructed there will be an increase in carbon monoxide generated at the location of the interchange, the eastern connector, Interstate 15, and along Broadway Avenue. Increased CO concentrations will be generated at the interchange and along the eastern connector because the traffic facilities are new.

There will be an increase in the CO generated along the interstate because of the increased traffic volume, however, because of the high vehicle speeds and large mixing volumes the effect on CO concentrations will be negligible. The CALINE 3 model showed an increase in CO concentrations at the Broadway receptor for certain meteorological conditions because of the predicted increases in traffic volumes; in all cases, however, the increases were minor. The CALINE 3 model showed a decrease in CO concentration at the Colonial Drive receptors for certain meteorological conditions because of the predicted lower traffic volumes.

Increased CO concentrations without the Beltview Interchange would be particularly evident at the intersection of Fee Street

and Eleventh Avenue. With the increased traffic volumes, the limited capacity of this intersection could result in excessive queuing on Eleventh Avenue and on Fee Street and a consequent increase in CO concentrations.

The Montana CO standard of 9 ppm for the eight-hour average and 23 ppm for the one-hour average should not be exceeded by the proposed project. The Montana standards for CO are more stringent than the federal standards.

## 5.7. WATER QUALITY

Since there are no streams or lakes within the project area, there will be no water quality impacts except those discussed in FLOOD HAZARD/STORM DRAINAGE, above, related to storm runoff.

## 5.8. NOISE

Predicted noise levels along the local street network resulting from the installation of the interchange and subsequent traffic volume changes may be established by comparing projected noise levels with FHWA noise abatement criteria. The computerized FHWA Highway Traffic Prediction Model SNAP 1.0 (Simplified Noise Analysis Program) was used to generate noise levels associated with the design hourly traffic volume (30th highest hourly volume) projected for each test location in the year 2006. Predicted year 2006 noise levels for each test location, both with and without the proposed interchange, are shown in the following table:

Table 5-6: Predicted Noise Levels (dBA)
(30th Highest Hourly Traffic Volume)

| Site No. | Location | Distance from Centerline | Year 1985 Existing Condition (dBA) | Year 2006 Without Interchange (dBA) | Year 2006 With Interchange (dBA) |
|---|---|---|---|---|---|
| 1 | 2100 Block of 11th Avenue | 50' | 65 | 68 | 67 |
| 2 | 200 Block of California (Smith School) | 160' | 52 | 54 | 53 |
| 3 | East Side of Smith School | 800' | 51 | 51 | 51 |
| 4A | Colonial Drive | 50' | 66 | 71 | 69 |
| 4B | Colonial Drive | 75' | 65 | 69 | 67 |
| 4C | Colonial Drive | 100' | 64 | 67 | 65 |
| 4D | Colonial Drive | 150' | 63 | 65 | 63 |
| 4E | Colonial Drive | 200' | 61 | 63 | 61 |
| 5 | Elaine Street | 50' | 51 | 51 | 67 |
| 6 | 2200 Block of Broadway | 68' | 56 | 60 | 61 |
| 7 | 2300 Block of Broadway (St. Peters Hospital) | 270' | 50 | 51 | 51 |
| 8 | I-15 (West R/W Line) | 88' | 54 | 64 | 67 |
| 9 | 2300 Block of Winne (St. Peters Hospital) | 100' | 50 | 52 | 53 |
| 10 | 2400 Block of Beltview Dr. | 45' | 54 | 61 | 61 |

It should be noted that significant increases in future noise levels on Colonial Drive, Broadway Avenue, Winne Avenue and Beltview Drive are anticipated regardless of whether or not the interchange is constructed.

It is evident from this data that no major noise impacts will occur on the residential streets in the area as a result of the interchange. The predicted change in noise levels in the vicinity of the school and the hospital, the most sensitive noise receptors, will be difficult to detect. Several projections for the west side of Colonial Drive were made at varying distances from the centerline to determine the combined effects of Colonial Drive and interstate noise. Buildings within 50 feet of the centerline of Colonial would exceed the noise abatement criteria for residential units (70 dBA) but would be within the 75 dBA criteria for commercial structures. A significant increase in noise is anticipated to occur on Elaine Street where the present ambient level of 51 dBA would increase to 67 dBA as a result of

the traffic generated by the connection of Elaine Street with the Interchange.

Noise impacts due to construction activities are anticipated to be minimal due to the distance between the interchange construction zone and the sensitive noise receptors. construction noise will be generated by both mobile equipment, such as dozers, graders and scrapers, and stationary equipment, such as jackhammers, generators, and compressors. It should be noted that construction noise impacts are of a temporary nature and may be minimized through the use of well-maintained muffler systems on the construction equipment and a limitation of on-site work hours to daylight hours only.

## 5.9. VISUAL

Since the project is located adjacent to an existing highway in an area at the edge of an urban environment where development is already occurring and will continue to occur with or without the interchange, the project should have no significant permanent adverse impact on the visual environment. When the interchange is complete, it will blend well with the developing urban environment.

Some negative impact may occur during the excavation operation due to the unsightly appearance of excavated areas in comparison to the surrounding terrain and due to related dust pollution. These impacts will be mitigated by proper dust control and will not remain after construction is complete. All areas disturbed by construction will be reshaped and reseeded with grasses and plants suitable to the area.

## 5.10. NATURAL RESOURCES

### 5.10.1. Vegetation

Vegetation in the area is very sparse and impacts resulting from the project will be limited to the removal from production of farmland used for grazing as described in Section 5.13 Agriculture and Irrigation.

### 5.10.2. Wildlife

Construction of the interchange will occur immediately adjacent to the interstate highway where wildlife impacts have already occurred. There will therefore be little or no impacts on wildlife resulting from interchange construction. Some impacts will result from subdivision and other development encouraged by the addition of the interchange including: The wildlife study completed by Karen Zackheim, Department of Environmental Studies, University of Montana,(23) lists some of the impacts that will occur as a result of subdivision activity in the project area including:

- Loss of wildlife habitat
- Increased presence of dogs who may harass many species

including squirrels, rabbits, deer and antelope.

- Increased human activity which will cause wildlife to diminish.

- The use of trail bikes, snowmobiles and all-terrain vehicles in the area of any subdivisions would virtually eliminate big game species from the area.

## 5.11. LAND USE IMPACTS

Interchange development at Beltview Drive is not expected to alter the evolving land use trends in the study area; however, construction of the interchange will affect the timing of development, particularly for commercial land uses. Current development in the project area is confined to the area west of the proposed interchange location. Significant increases in residential and office uses have occurred in recent years in the area. Completion of a bowling alley, a lounge, and a car wash along Colonial Drive has initiated commercial development in the area north of the proposed interchange location. The project area can be expected to continue to increase in residential development, regardless of the proposed action because the area provides a desirable living environment. Continued commercial development is dependent, to a large degree, upon improved access. The fact that construction of a large motel/convention center has been postponed pending interchange construction is a prime example of commercial development's dependence upon site accessibility.

The primary commitment on which much of the land use planning and transportation network in the study area is based is the location of an interchange at Beltview Drive. Previous planning studies, conducted by both public and private entities, have anticipated continued residential and commercial development in this suburban Helena area. The I-15 Corridor Study,(24) completed in 1980, identified the Beltview Interchange as one of three locations in the Helena area where such facilities will improve access and maximize usage of the Interstate. The development of the proposed interchange was also incorporated into the Helena Transportation Plan, 1981 Update(25) and the Southeast Helena Comprehensive Plan(2) after public involvement activities were completed.

Figures 5-1 and 5-2 show the current land use plans for the project area. The plans include an exchange where approximately 30 acres of residential land (as shown in the Southeast Helena Comprehensive Plan(2)) was changed to commercial and 30 acres of commercial land near the end of the existing Beltview Drive was changed to residential. The net result will be virtually no change in the amount of land designated for each use.

Land use impacts resulting from construction of the proposed interchange are of long-term significance to the Helena area. The improved accessibility offered by the interchange may serve to accelerate commercial development on lands permitting such uses. The increased accessibility may in turn enlarge the market area

# DEVELOPMENT PLAN

## SOUTHEAST HELENA ANNEXATION

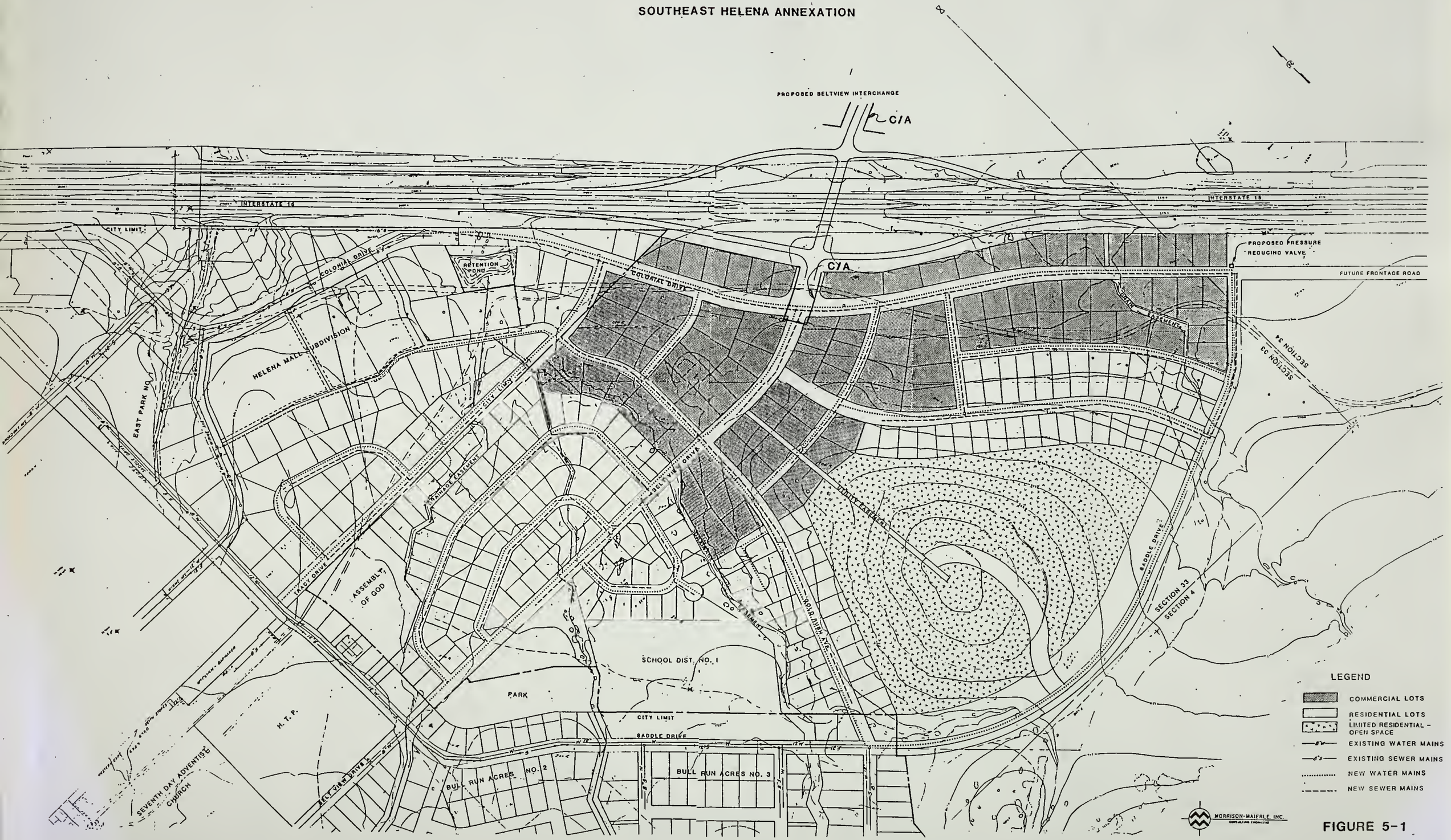



FIGURE 5-1

# DEVELOPMENT PLAN

SOUTHEAST HELENA ANNEXATION

PADBURY & MDOH PROPERTY

MORRISON-MAIERLE, INC.
CONSULTING ENGINEERS

LEGEND

- COMMERCIAL LOTS
- NEW WATER MAINS
- NEW SEWER MAINS
- MDOH PROPERTY BOUNDARY

US 12

OLD ACRS

TRAILER PARK

MDOH PROPERTY PROPOSED FOR SALE

FUTURE CONNECTION TO US 12

C/A

ACCESS DENIED UNTIL UPGRADED

EXISTING FRONTAGE ROAD

TO CAPITOL INTERCHANGE

R/W

R/W

PROPOSED BELTVIEW INTERCHANGE

INTERSTATE 15

INTERSTATE 15

TO MONTANA CITY

80

70

FIGURE 5-2

for some commercial activities and create employment opportunities. Property values on strategically located parcels of land may also be influenced due to access improvements. Since many of the properties directly affected by the proposed action are adjacent to the City of Helena, it is likely that annexation of these areas will occur. Annexation and the subsequent extension of city services and utilities will also serve to induce growth. Lands to be annexed will be pre-zoned for permitted land uses.

Projections indicate that traffic on the major street network in this portion of southeast Helena will continue to increase in the future regardless of whether or not the proposed interchange is constructed. Little variation in traffic volumes are expected on residential streets; however, interchange development will have significant effects on major roads leading to and from areas planned for commercial uses. Interchange construction is projected to result in significant net decreases in traffic on Colonial Drive and Eleventh and Prospect Avenues. Provision of an I-15 interchange and less traffic on Colonial Drive will improve access to the medical complex at St. Peter's Hospital. Broadway, Winne Avenue, and an extension of Beltview Drive northeastward to Elaine Street and ultimately to U.S. 12 will serve to establish an important transportation link in this currently undeveloped area. The lands east of I-15 would have limited commercial development potential without the increased accessibility afforded by the interchange.

Additional right-of-way will be required from both sides of Interstate 15 to accommodate construction of the interchange. Right-of-way requirements are estimated to be 4.6 acres on the east side of I-15 and approximately 4.7 acres on the west side. It is expected that right-of-way required for the proposed interchange would be donated by adjacent landowners.

In summary, commercial and residential growth in the area is not unanticipated since the area is within Helena's jurisdictional area and is included in an adopted land use development plan. The rate of development in the area, particularly for commercial land uses, will be increased with the improved accessibility provided by the interchange. Probable annexation of some areas near the interchange and extension of city services and utilities will also facilitate growth in this portion of Helena's urban area.

## 5.12. HISTORIC/CULTURAL/ARCHAEOLOGICAL SITES

The cultural resource survey(26) found one relatively recent structure and one isolated projectile point which are not considered cultural sites. Therefore, since there are no known sites, no impact is expected on historical, cultural, archaeological resources.

A copy of the report for the inventory has been submitted to the Montana State Historic Preservation Office and they concur with the archaeologist's methods, results and recommendations and have indicated that the project should be able to proceed, in this

location, in compliance with Section 106 of the National Historic Preservation Act.(27)

## 5.13. TRAFFIC AND SAFETY

### 5.13.1. Future Traffic Volumes

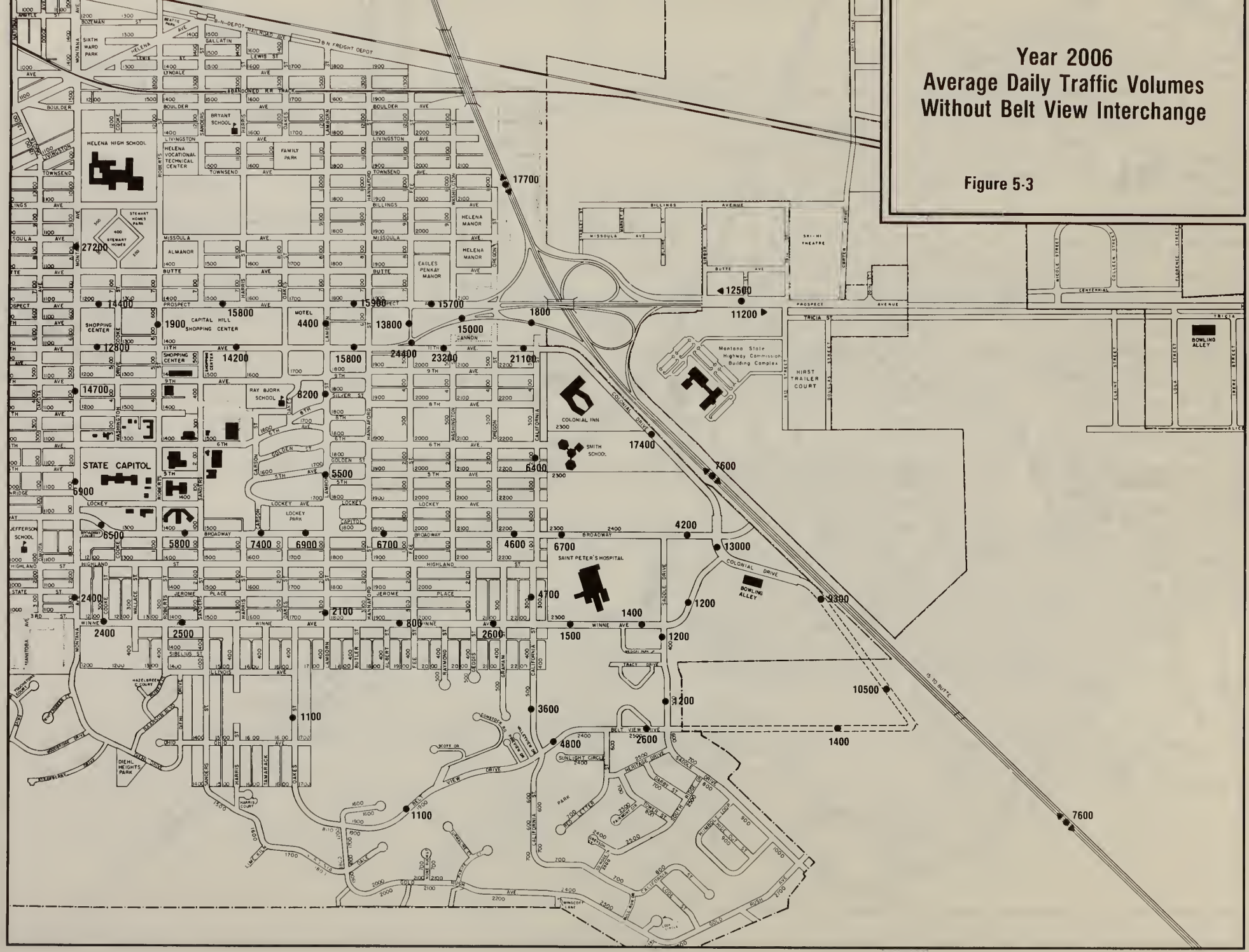
It is impractical to simply apply historical factors to existing traffic counts to project future traffic volumes for a local urban street network. Therefore, urban travel predictions are developed through the use of a traffic assignment model. The computer assignment model used for the purposes of this study was the "PLANPAC/BACKPAC" available through the Federal Highway Administration. The MDOH utilizes this model to assess traffic in Montana's urban areas and employed it to model traffic in the Helena Transportation Plan 1981 Update. (24) This model uses traffic generator parameters such as population and employment combined with travel desires between traffic zones to approximate traffic on the major street network.

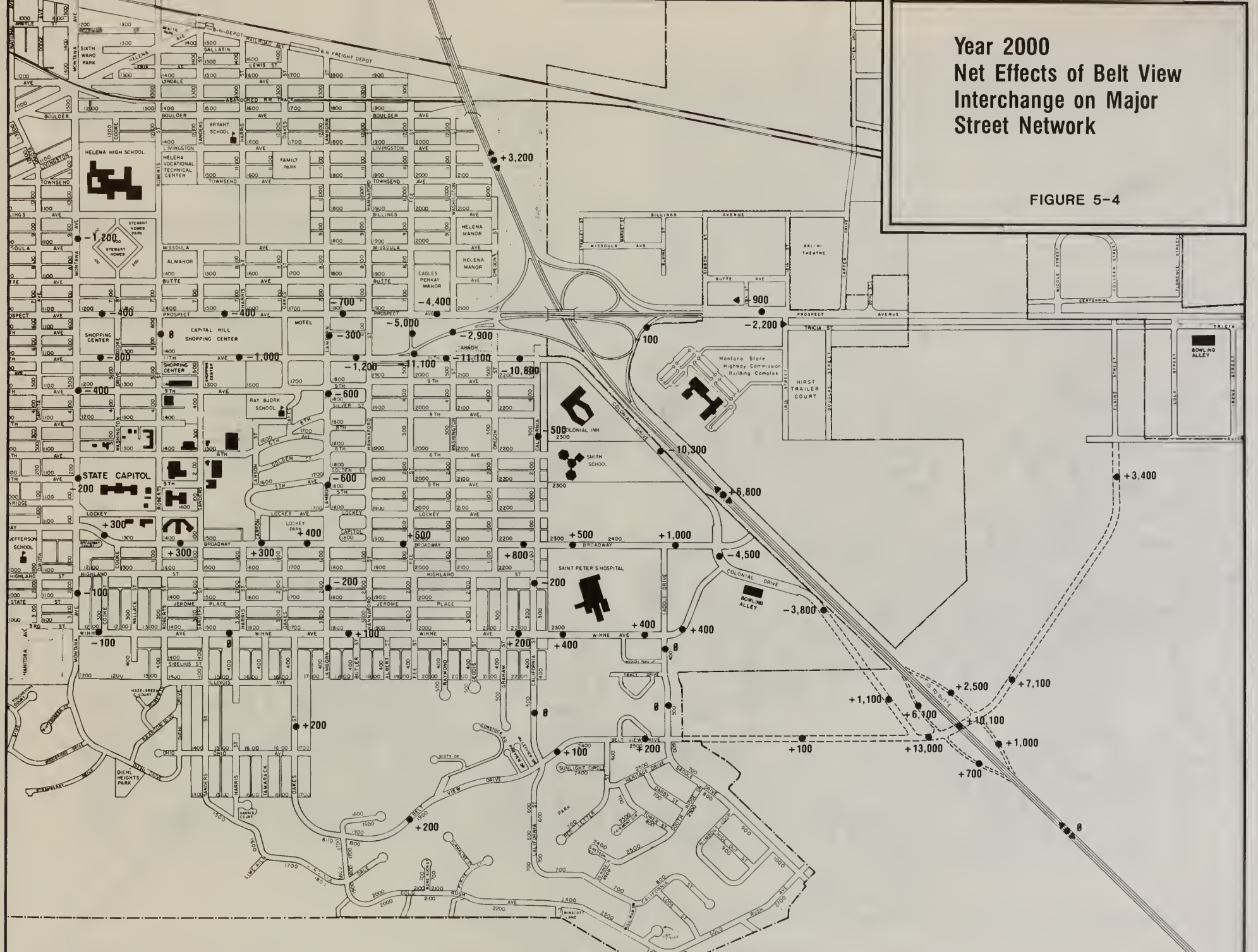
Estimates of future socio-economic conditions in the southeast Helena area were developed in order to project future traffic volumes. The residential and commercial development expected to occur near the proposed Beltview Drive Interchange is discussed previously in this chapter and in Chapter 5. these socio-economic parameters were used in the traffic modeling process to develop future traffic volumes on study area roadways.

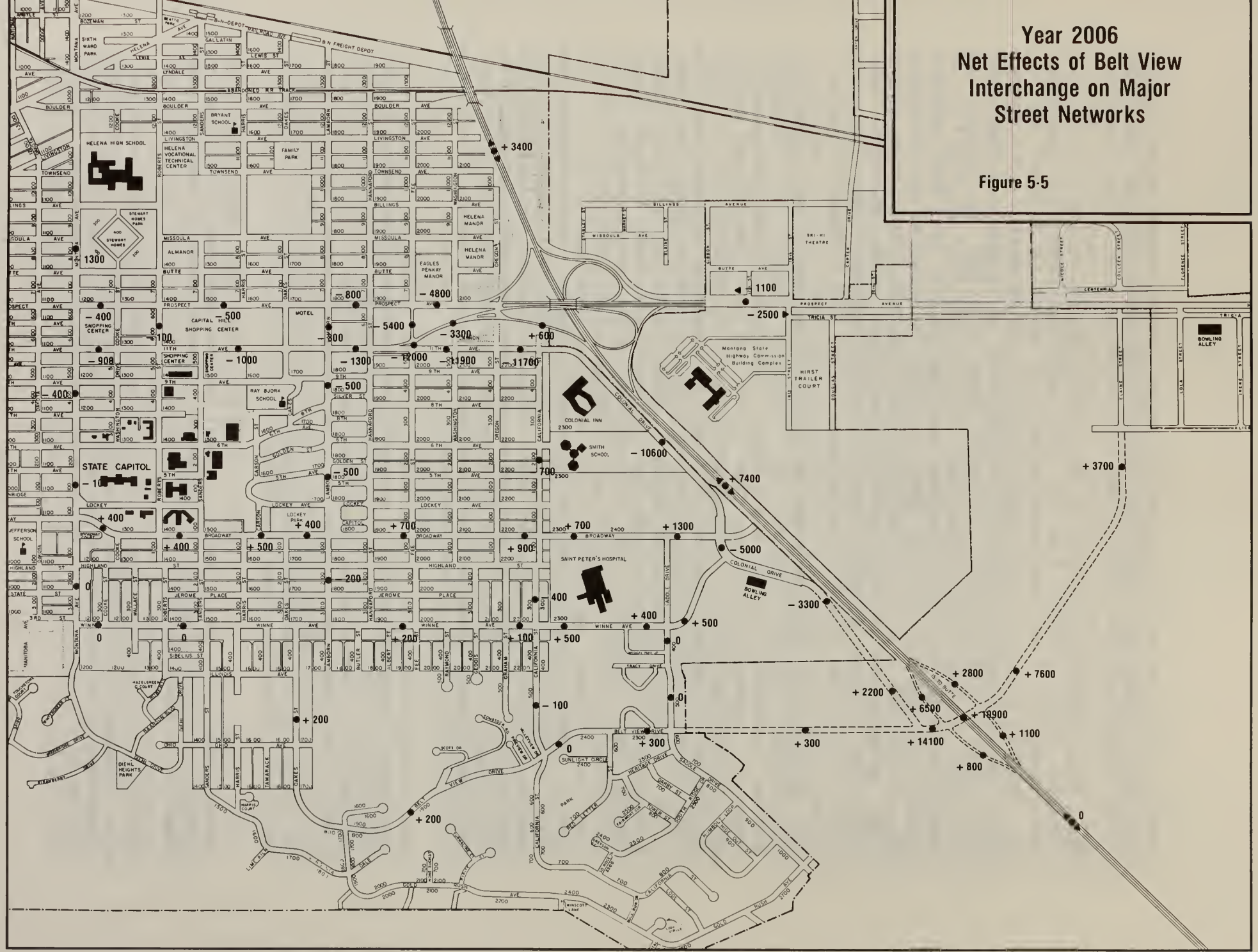
Figure 5-3 depicts the average daily traffic projections for the year 2006 on the major street network without the proposed I-15 interchange at Beltview Drive. It is readily apparent from this data that anticipated residential and commercial development in this portion of Helena's urban area will produce significant increases in traffic on Colonial Drive and Eleventh Avenue. Traffic volumes on Broadway, Winne Avenue, and California and Lamborn Streets are expected to more than double by the year 2006. Traffic on the eastern section of Broadway will increase most notably. It should be noted in the interpretation of the traffic projections that the model does not utilize capacity restraints. Therefore, in several cases, such as Colonial Drive and Eleventh Avenue, projected traffic volumes will exceed the capacity of the existing roadways by the year 2006. A re-routing of traffic to parallel local streets could be expected at the time that roadway capacity is exceeded.

The traffic modeling process was also utilized to project traffic volumes and identify impacts on the local street network resulting from the construction of the proposed Beltview Interchange. Figure 5-4 depicts the projected year 2006 traffic volumes for the major street network in southeast Helena with the proposed Interchange. It is notable that additional connector streets were included in the traffic model including a link between the proposed interchange and U.S. 12, east of Carter Drive and the required connections to Colonial and Beltview Drives.

Projected traffic volumes shown in these figures do not correlate


Year 2006
Average Daily Traffic Volumes
Without Belt View Interchange
Figure 5-3


Year 2000
Net Effects of Belt View Interchange on Major Street Network
FIGURE 5-4


Year 2006
Net Effects of Belt View
Interchange on Major
Street Networks
Figure 5-5

exactly with the existing traffic count locations shown in Figure 4-6 due to the fact that the computer projects volumes for only those streets on the major street network.

The net effects (increases or decreases in traffic on area streets and roads) due to the addition of the Beltview Interchange to the local road network is shown in Figure 5-5. It is readily apparent from this data that major shifts in traffic will occur when the Beltview Interchange is in place. The most significant net traffic impacts are expected to occur: on Colonial Drive, which will experience a decrease in traffic of approximately 10,600 vehicles per day (vpd); on the eastern portion of Eleventh Avenue where traffic is expected to decrease by 11,900 vpd; on I-15 north of the proposed interchange which will experience an increase of 7,400 vpd; and on the "new" connector street between the proposed interchange and U.S. 12, which will carry an estimated 3,700 vpd by the year 2006.

The operation of the proposed Beltview Interchange will result in beneficial traffic impacts on Eleventh Avenue and Prospect Avenue, especially near Fee Street. Traffic volume decreases on Prospect Avenue will range from 4,800 vpd near Fee Street to 400 vpd at Montana Avenue. Similar reductions in traffic are expected on Eleventh Avenue, with a 3,300 vpd decreased projected near the Fee Street Intersection. The traffic projections for the year 2006, without the Beltview Interchange, indicate that intersection capacities at both Eleventh Avenue and Prospect Avenue and Eleventh and Fee Street will be exceeded. The operation of the proposed interchange will not only reduce traffic volumes on Eleventh and Prospect Avenues but will also reduce congestion and delays at several major intersections on each roadway. Montana Avenue, north of the Eleventh-Prospect Avenue couplet, will receive some minor relief as a result of the proposed interchange. Due to the increased accessibility to the Interstate, a minor shift in traffic from the heavily travelled Montana Avenue to I-15 is expected. The net result will be a 1,300 vpd decrease on Montana Avenue.

The construction of an interchange at Beltview Drive will increase the accessibility to I-15 and increase its usage in the Helena urban area. Traffic on I-15 between the proposed Beltview and Capitol Interchanges is projected to double to 13,700 vpd and traffic volumes north of the Capitol Interchange should increase by 3,400 vpd by the year 2006. The projected increase in traffic on I-15 does not pose any capacity problems due to the high design of this four-lane facility.

Additionally, the proposed interchange will stimulate the development of providing relief to the system by unloading several heavily traveled existing streets and diverting the traffic to the new more direct route.

The existing street network in the area near the interchange will also experience significant effects. In general, the greatest changes are expected to occur east of Lamborn Street and south of Eleventh Avenue, with only minimal effects on streets outside this area. As previously mentioned, Colonial Drive will

experience the most significant decrease in traffic. Traffic volumes on two major north-south collector streets, California Street and Lamborn Streets, are expected to decrease in the future. Volumes on California Street are projected to decrease from 400 to 700 vpd, and traffic on Lamborn Street should decrease by 200 to 500 vpd.

The major east-west routes through the area should experience increased usage as a result of the proposed interchange construction. It is likely that the interchange and local roads will be used as a "short cut" between areas south of Helena and destinations in the Capitol or downtown areas. The net effect of this usage will be a traffic volume increase on Broadway ranging from a 400 vpd increase at Montana Avenue to a 1,300 vpd increase at the eastern end of the street. Similarly, volumes on Winne Avenue should increase from 400 vpd at Saddle Drive to 200 vpd at Lamborn Street. Traffic volumes on Beltview Drive, west of the proposed interchange, are projected to increase by 200 to 300 vpd as a result of the installation of the Beltview Interchange.

### 5.13.2. Bicycle/Pedestrian Traffic

The increased commercial development that is planned for the area will generate additional travel in this portion of southeast Helena since the new shopping and office areas will be within walking distance of several large residential areas. It is anticipated that pedestrian and bicycle traffic will increase to and from these areas with Broadway, Winne Avenue, and Beltview Drive receiving the greatest usage.

Variations in vehicular traffic volumes on local streets will also affect pedestrian and bicycle travel. The grade school students at Smith School will benefit from the projected decreases in traffic on both California Street and Colonial Drive. Increased traffic on Broadway and Winne Avenue is expected to make these routes less attractive to pedestrian and bicycle usage. No adverse effects on pedestrian/bicycle traffic is anticipated on minor residential streets.

The proposed interchange will provide an additional location for safe pedestrian/bicyclist crossings of the Interstate. Unfortunately, due to its location in the south and currently undeveloped section of Helena, it most likely will not fulfill all crossing needs in the area. The interchange will be too far south of the Smith School and Montana Department of Highways complex to be effectively utilized by area residents.

### 5.13.3. Traffic Safety

The major impact of the construction of the proposed interchange at Beltview Drive is a redistribution of traffic on the local street system. This redistribution should result in decreases in traffic volumes on most existing local streets and traffic increases on the Interstate and the required connector road between the Interstate and U.S. 12. Broadway and Winne Avenue will be the only local streets that will experience any notable traffic increases.

Based upon Montana Department of Highways accident data, the statewide accident rate for Interstate travel is 1.26 accidents per million vehicle miles traveled (ACC/MVM), while the accident rate on Helena's urban streets is 4.37 ACC/MVM. Therefore, the traffic redistribution resulting from development of the Beltview Interchange will be beneficial with respect to traffic safety since traffic will be shifted from urban streets to a safer four-lane facility. It is expected that the accident rate for the new connector streets will be similar to other urban streets with similar characteristics.

## 5.14. AGRICULTURE AND IRRIGATION

No prime or unique farmland or farmland of statewide or local importance would be affected by the project.

No irrigation would be affected.

## 5.15. CONSTRUCTION IMPACTS

### 5.15.1. Noise

Impacts from construction noise are not expected to be significant since no homes, businesses or other structures sensitive to noise pollution currently exist near the project area.

### 5.15.2. Air Quality

Construction activities are expected to have a temporary adverse air quality impact on the Beltview Interchange project area. Particulate emissions will be generated by the excavation and movement of soil, an increased use of unpaved roads in the project area, and wind erosion of devegetated areas. Gaseous emissions would be generated by large gasoline and diesel engines on construction vehicles and equipment as well as the support vehicles used during the project. Additional particulate and gaseous emissions would be generated by the processing of roadway construction and surfacing materials.(33) This source of emissions will not affect air quality in the immediate project area since processing plants for construction and surfacing materials will be located away from the work site.

Precautions may be taken to minimize the air quality impacts likely to be experienced during construction of the roadway. These measures include the use of water or chemical palliatives to minimize dust generation at the construction site, vehicle speed restrictions, and the use of prompt reseeding and mulching of disturbed areas to minimize the potential for wind erosion. Compliance with all federal, state, and local air quality regulations as well as all standard specifications and practices of the Montana Department of Highways(30) relating to air quality would be required and enforced.

5.15.3. Borrow and Waste Areas

To construct the embankments necessary for the ramps and crossroads, it is estimated that approximately 250,000 cubic yards of additional fill material will have to be imported from approved borrow sites. It may also be necessary establish a waste site to dispose of some material found at the project which is unsuitable for embankment construction.

5.15.4. Vehicle and Pedestrian Traffic

Construction operations will be centered around the interchange and, since there are no existing streets or roads in the area, traffic will not be impacted. Some area streets may have increased traffic, including increased truck traffic, during construction.

Interstate highway traffic may be affected by construction adjacent to the traffic lanes, by construction equipment crossing the traffic lanes and by the construction of the bridge structure over the traffic lanes. With careful construction planning and scheduling, the impacts will be small and little or no delay to the travelling public will be required.

5.16. RELATED STREET CONSTRUCTION

Approximate locations of future connecting streets are shown in Figure 2-2 in Chapter 2. The following is a description of each phase, the approximate time of construction and the planned funding sources. All connecting roads discussed are in conformance with the Helena Transportation Plan 1981 Update (25). The location of streets and roads has been discussed with the Helena Transportation Coordinating Committee (See Section 7.2). Approval by the committee is required before any road or street construction takes place.

Colonial Drive, from the southeast end of the existing pavement to the interchange crossroad. This section of street will be constructed with the interchange--construction costs are included in the cost of the interchange described in following sections. The construction will be funded by the interchange S.I.D.

Beltview Drive from the northeast end of the existing pavement to the interchange. Construction of this segment is planned to be complete in 1987 and will be funded by a S.I.D. created to assess adjacent property owners.

Northeast Side Subdivision, including the commercial lots and related streets shown on Figure 5-2 DEVELOPMENT PLAN on the Padbury and MDOH property. It is planned that all lots shown will be platted and all streets and other improvements shown will be constructed within one year of construction of the interchange. The street construction will be funded by a S.I.D. created to assess adjacent property owners.

Connection to Frontage Road on the northeast side of the

interstate. This frontage road would carry traffic from the interchange area to U.S. Highway 12 at 18th Street. Construction of this connection is not planned at this time. Access to the frontage road from the northeast side subdivision described above will be prevented because the frontage road, in its current condition will not accommodate additional traffic. When the need and funding sources exist, the connection will be made and the road improved as required to accommodate the projected traffic and connect with Highway 12. Funding will be by S.I.D. or by other future funding sources.

Connection to Highway 12, from the interchange northerly to U.S. Highway 12 near Elaine Street. Based on projected year 2006 traffic volumes (see Figure 5-3), a two lane roadway from the northeast side subdivision to Highway 12 will be required. No additional lanes will be required on Highway 12 at the intersection and only the 2-lane roadway (no additional turning lanes) will be required for the connecting street at the intersection. A traffic signal will be required at the intersection to allow traffic entering the intersection from the connecting road to turn left toward the Capitol Interchange.

Construction of this connection is not planned at this time. When the need exists, the connection will be made and the road improved as required to connect with Highway 12. Funding will be by S.I.D. or by other future funding sources. The exact location of this connection is approximate and may be altered based on future development and transportation needs in the Southeast Helena area.

The Helena Transportation Plan 1981 Update (25) recommends construction of this connection as a "Street Network Improvement" to be completed during the period 1990 to 2000. A more precise time schedule cannot be presented at this time because:

1. There are no firm funding sources at the present time. As indicated above, funding will probably be provided by a S.I.D. and will become available as development patterns and economic conditions become favorable.

2. The northeast side commercial subdivision and the commercial subdivisions on the southwest side do not require direct access to Highway 12 and will receive no significant benefit from it.

3. Developers of the commercial areas adjacent to the interchange do not control the property between the interchange area and Highway 12 where the connection would be constructed.

4. It is not known at this time exactly where the connection will be constructed. The location and alignment shown in this document and the Helena Transportation Plan Update (25) are only recommendations. Additional analysis and study must be conducted before a final alignment and connection point are selected.

Frontage Road from the interchange east along the southwest side of the interstate highway to the East Helena Overpass. Construction for this segment is planned to occur as the area develops and as funding becomes available. The construction will be funded by a S.I.D. or by other future funding sources.

The Montana Department of Highways will be responsible for maintenance of constructed facilities that are located with the interstate right-of-way including the overpass structure, ramps and the cross road. The maintenance of all other public connecting roads and streets outside the interstate right-of-way will be the responsibility of the city or county.

## 5.17. ENERGY

A major emphasis in the Helena Transportation Plan Update (25) was to improve traffic operation through the use of transportation system management improvements and some major improvements to provide a more efficient transportation system. The street network recommended in the plan will result in an overall reduction in the vehicle miles traveled and the hours of travel. The end result will be transportation-related energy savings for the community.

The Beltview Interchange and connecting streets are all part of the recommended plan and should contribute to a more efficient transportation system and related energy savings.

## 5.18. COSTS

### 5.18.1. Administration and Engineering

The following are estimates of the administration and engineering costs associated with the project:

Table 5-7: Administration and Engineering Costs

| Item | Cost |
|---|---|
| Preparation of E.I.S. | $ 49,900 |
| Plans and Specifications | $ 66,028 |
| S.I.D. Administration | $ 86,000 (5%) |
| Administration by M.D.O.H. | * |
| Constr. Inspection by M.D.O.H. | * |

* Per Memorandum of Understanding(29) between M.D.O.H. and the Diehl Company, M.D.O.H. will review all phases of the project and perform construction supervision and inspection. M.D.O.H. will bill the developer for all costs incurred, but no estimate of costs has been provided.

### 5.18.2. Right-of-Way

All right-of-way required to construct the interchange and the Colonial Drive extension will be donated by the two major property owners in the area.

### 5.18.3. Construction Costs

The total construction of the interchange including overpass structure, crossroad, ramps and the connection to the existing Colonial Drive is estimated at $1,931,000.

### 5.18.4. Funding Sources

The interchange will be funded by a special improvement district (S.I.D.) bond. The boundaries of the proposed S.I.D., on the southeast side of the interstate is shown on Figure 5-6. The S.I.D. on the northeast side of the interstate will include all of the commercial area shown on Figure 5-2. Figure 5-6 also shows a secondary assessment area where property owners will be assessed an amount substantially less than the primary areas because they will receive less benefit.

PRIMARY ASSESSMENT AREA

SE Quad. = 30.5 Acres
SW Quad. = 24.7 Acres

SECONDARY ASSESSMENT AREA

SE Quad. = 0.0 Acres
SW Quad. = 16.0 Acres

# S.I.D. ASSESSMENT PLAN

## SOUTHEAST HELENA ANNEXATION

SCALE: 1" = 400'

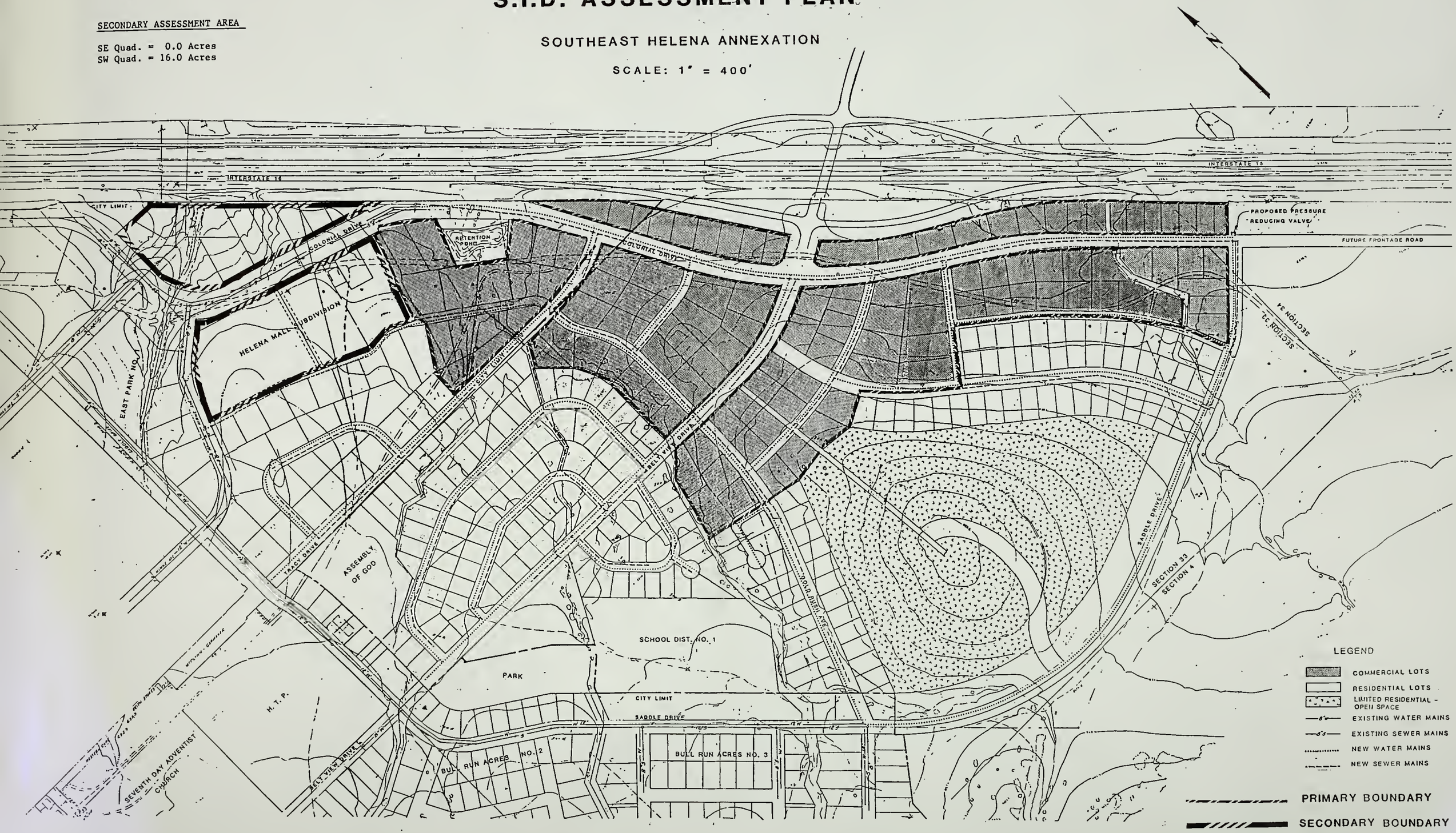



FIGURE 5-6

Revised 6-17-85

## 5.19. REFERENCES FOR CHAPTER 5

Copies of all references listed below are available for inspection at the offices of Morrison-Maierle, Inc., 910 Helena Avenue, Helena, Montana 59601.


1. Helena-Lewis and Clark County Areawide Planning Organization, Lewis and Clark County Comprehensive Plan, 1983.

2. Robert Peccia and Associates. Southeast Helena Comprehensive Plan 1981.

3. Graham, Jerry. Morrison and Maierle Inc., Construction Specifications, personal communication, June 1985.

4. Robertson, Bob. Slettin Construction Co., Construction specifications, personal communication, June 1985.

5. Olson, Bill. Montana Contractors Association, Construction specifications and worker earnings, personal communication, June 1984 and June 1985.

6. Chalmers, James A., Anderson, Beckhelm, and Hannigan.An Empirical Model of Spatial Interaction in Sparsely Settled Regions, 1977.

7. Cooper, John. The Diehl Company, Land characteristics and development plans, personal communication, April, May, and June 1985.7. Diehl, William.

8. Erickson, Gary. Mid-Continent Developers Inc., Development Plans, personal communication with John Cooper, May 1985.

9. Wilson, John. Montana Travel Promotion Bureau, Convention business potential, personal communication, May 1985.

10. Weggenman, Joe. Helena Chamber of Commerce, Helena economic information, personal communication, May 1985.

11. Simkins, Dave. Capital Hill Mall Merchants Association, Business impacts, personal communication, May 1985.

12. Grossberg, Phil. Helena Downtown Businessmen's Association, Business impacts, personal communication, May 1985.

13. Melby, Patrick. Helena Improvement Society, Business impacts, personal communication, June 1985.

14. Ellis, Larry. Helena Traffic Engineering Department, Local traffic characteristics, personal communication, May 1985.

15. U.S. Department of Transportation, Federal Highway Administration, Liveable Urban Streets: Managing Auto Traffic in Neighborhoods, 1976.

16. Frezzette, Al. Real Estate Appraiser, Property value impacts, personal communication, May 1985.

17. Moore, Jack. Real Estate Appraiser, Property value impacts, personal communication, May 1985.

18. Elison, Joe. Real Estate Appraiser, Property value impacts, personal communication, May 1985.

19. Wilkie, Randy. Montana Department of Revenue, Construction cost and taxable value information, personal communication, June 1985.

20. Monitbeller, Barbara. Helena Building Department, Housing construction costs, personal communication, June 1985.

21. Campbell, John. Helena School District 1, School development plans, personal communication, May 1985..PA

22. Robert Peccia & Associates, South Hills Planning Study, 1985.

23. Karen Zackheim, Department of Environmental Studies, University of Montana, Wildlife Study, No date.

24. Henningson, Durham & Richardson, Inc., A Study of the I-15 Corridor in the Vicinity of Helena, Montana, September 1980.

25. Robert Peccia & Associates, Helena Transportation Plan, 1981 Update, March 30, 1982.

26. Historical Research Associates, Cultural Resource Inventory of the Proposed Beltview Interchange Near Helena, Montana, May 16, 1985.

27. Stanfill, Alan L., Historic Preservation Office, Montana Historical Society, letter dated June 3, 1985.

28. Morrison-Maierle, Inc., An Investigation into the Improvements to the Helena Water & Sewer System Necessary to Support the Southeast Helena Annexation Development Area, 1985

29. Montana Department of Highways and the Diehl Company, Memorandum of Understanding, October 22, 1984.

30. Montana Department of Highways, Standard Specifications for Road and Bridge Construction, 1981 Edition.

31. Midwest Research Institute for the Montana Air Quality Bureau, Department of Health and Environmental Sciences, Emission Factor Correction Parameters for Paved and Unpaved Roads, Final Report - Part II, November 1978.

32. Office of Transportation Laboratory, California Department of Transportation, CALINE 3 - A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets, FHWA/CA/TL-79/23, November 1979.

33. U.S. Department of Transportation, Environmental Assessment Notebook Series: Volume 4 - Physical Impacts, DOT P5600.4, 1975.

# 6. MITIGATION MEASURES

## 6.1. NATURAL RESOURCES

### 6.1.1. Vegetation

Areas disturbed by excavation or other construction operations will be reseeded with grasses or other plants suitable to the area and the environment.

### 6.1.2. Wildlife

As requested by the U.S. Fish and Wildlife Service (3), if project construction requires the relocation of power lines, such powerlines should be raptor proofed according to the specifications provided in "Suggested Practices for Raptor Protection on Power Lines - the State of the Art in 1981"

## 6.2. LAND USE

Interchange construction may influence the rate and type of development which occurs. Local governmental policies concerning annexation, zoning, utility services, subdivision requirements, and building permits should ensure that growth in the area is planned and in the community's best interest.

## 6.3. HISTORICAL/CULTURAL/ARCHAEOLOGICAL

The cultural survey has indicated that no known historical or archaeological sites exist within the project area. The project should be closely monitored to ensure that previously undisturbed cultural remains are not destroyed by project activities. Should any historical or archaeological remains be encountered during excavation or other construction operations, the Montana State Historic Preservation Office should be notified immediately. Montana Department of Highways construction specifications require that "When any contractor's operation encounters remains of prehistoric people's dwelling sites or artifacts of historical or archaeological significance, the operation will be temporarily discontinued until notified by the engineer to resume work."(1) The specifications also include provisions and procedures for notifying proper authorities and assuring that the findings are properly removed and recorded.

## 6.4. TRAFFIC AND SAFETY

The proposed interchange will allow for the redistribution of traffic in the southeast Helena area. Generally, traffic is expected to shift from heavily traveled local streets onto the Interstate and the new connector street linking the interchange to U.S. 12. This shift will reduce congestion and delays on many local streets and provide an overall benefit with respect to traffic safety.

The interchange will include a five-foot-wide concrete walkway on the overpass structure itself (see Figure 3-1 in Chapter 3), as well as sidewalks adjacent to all proposed connector streets. In

fact, a city ordinance requires sidewalks to be constructed on both sides of all new city streets. Wheel chair ramps and pedestrian crosswalks will be provided at all major intersections and prominent pedestrian crossing locations.

All new connector streets associated with the interchange will consist of an urban design section wide enough to accommodate bicycle traffic along the roadway shoulders. No designated bikeways or separate bike paths are planned as a part of the proposed interchange project.

## 6.5. CONSTRUCTION

### 6.5.1. Air Quality

All requirements of the Montana Department of Highways Standard Specifications for Road and Bridge Construction(1) and other local and state regulations should be followed to mitigate possible impacts.

### 6.5.2. Borrow and Waste Areas

All borrow or waste areas should have approved reclamation plans setting forth the planned measures to be taken when construction is complete including reshaping, topsoiling and seeding in accordance with MDOH Construction Specifications.

### 6.5.3. Vehicle and Pedestrian Traffic

Effects of the project construction on existing traffic should be minimized and controlled by proper signing, pavement marking, flagmen and other traffic control devices as outlined and recommended in the Manual on Uniform Traffic Control Devices.(2)

## 6.6. REFERENCES FOR CHAPTER 6

Copies of all references listed below are available for inspection at the offices of Morrison-Maierle, Inc., 910 Helena Avenue, Helena, Montana 59601.


1. Montana Department of Highways, Standard Specifications for Road and Bridge Construction, 1981 Edition.

2. U.S. Department of Transportation, FHWA, Manual on Uniform Traffic Control Devices, 1978.

3. U.S. Department of the Interior, Fish and Wildlife Service, Letter to W.S. Dunbar, FHWA, Helena, Montana dated 21 March 1985.

# 7. COMMENTS AND COORDINATION

## AGENCY COORDINATION

### 7.1. SCOPING AND IDENTIFICATION OF SIGNIFICANT ISSUES

To encourage and provide the opportunity for early public comment on the proposed project, an organized scoping process has been conducted including the following:

A Letter of Intent was prepared and mailed to all interested public and private agencies and to individuals explaining the scope and purpose of the interchange project and requesting written comment.

A Public Scoping Meeting was held 07 March 1985 in the Department of Highways auditorium. The meeting included a workshop session from 1:00 p.m. to 5:00 p.m. and a public meeting beginning at 7:30 p.m. with a presentation explaining the project scope and purpose. Those attending were encouraged to offer both oral and written comment on significant issues which should be considered. The meeting and its various details are summarized in Technical Memorandum #2, available at the Montana Department of Highways.(1)

A Meeting to Discuss Alternatives was held 04 April 1985 in the Department of Highways auditorium. The meeting included a workshop session from 2:00 p.m. to 4:00 p.m. and a public meeting beginning at 7:30 p.m. with a presentation explaining the work completed and the alternatives developed to-date. Those attending were encouraged to offer comments on viable alternatives which should be considered in the environmental impact statement. The meeting and its various details are summarized in Technical Memorandum #3, available at the Montana Department of Highways.(2)

A Meeting to Discuss Preliminary Findings was held 09 May 1985 in the auditorium of the Montana Public Service Commission in the Montana Department of Highways building. The meeting included a workshop session from 2:00 p.m. to 4:00 p.m. and a public meeting beginning at 7:30 p.m. with a presentation explaining the work completed to date and providing significant explanation and detail of the preliminary findings. Those attending were encouraged to offer comments and ask questions. The meeting and its various details are summarized in Technical Memorandum #4, available at the Montana Department of Highways.(3)

All meetings were advertised three times in the Independent Record including the two Sundays before each meeting and the Wednesday before each meeting. News releases were also sent to local television and radio stations for each meeting. After the first meeting on 07 March, notices were also sent to all persons who attended and provided mailing addresses at previous meetings. Attendance lists were developed for all meetings.

An aerial photograph at a scale of 1 inch equals 200 feet was available at each meeting. At the 09 May 1985 meeting on preliminary findings, several displays were available showing development plans, proposed S.I.D. boundaries and existing and projected traffic volumes.

Several additional meetings were attended by members of the project team, by invitation, including:

- Meeting of the South Central Helena Subcommittee of the Helena Citizens Council on 10 April 1985.

- Meeting of the Helena Citizens Council on 24 April 1985.

- Various meetings with the City of Helena and the Areawide Planning Organization.

- Meeting of the Helena Transportation Coordinating Committee on 13 June 1985.

- Meeting of the Helena Transportation Coordinating on 08 October 1985.

- Meeting of the Smith School Advisory Council on 21 November 1985.

Each of the above additional meetings included a presentation of the project scope, purpose, work to-date and planned future progress and provided an opportunity for comment and questions by those attending.

## 7.2. REFERENCES FOR CHAPTER 7

Copies of all references listed below are available for inspection at the offices of Morrison-Maierle, Inc., 910 Helena Avenue, Helena, Montana 59601.


1. Morrison-Maierle, Inc., Technical Memorandum #2, Public Scoping Meeting, March 12, 1985.

2. Morrison-Maierle, Inc., Technical Memorandum #3, Meeting to Discuss Alternatives, April 10, 1985.

3. Morrison-Maierle, Inc., Technical Memorandum #4, Meeting to Discuss Preliminary Findings, May 20, 1985.

## 8. LIST OF PREPARERS

This environmental impact statement was prepared by the Montana Department of Highways and Federal Highway Administration with assistance from private firms. The primary agencies and the individuals involved with the preparation of this document are the following:

MONTANA DEPARTMENT OF HIGHWAYS

Gordon L. Larson, Supervisor, Consultant and Safety Design Section, Preconstruction Bureau

Mark Leighton, Civil Engineer, Consultant and Safety Design Section, Preconstruction Bureau

FEDERAL HIGHWAY ADMINISTRATION

William Dunbar, Environmental and Design Engineer

Dale W. Paulson, Environmental Engineer

MORRISON-MAIERLE, INC.

Brad Peterson, Chief Highway Engineer and Project Manager

J. Walter Scott, Chief Civil Engineer

Gerald A. Graham, Drafting Supervisor and Highway Technician

Timothy Berry, Chief Environmental Engineer

William Keith, Vice President and Chief Structural Engineer

ROBERT PECCIA & ASSOCIATES, INC.

Robert Peccia, President and Traffic Engineer

Douglas Widmayer, Civil and Traffic Engineer

JAMES BOYER CONSULTING

James Boyer, Socio-Economic Analysis

HISTORICAL RESEARCH ASSOCIATES

T. Weber Greiser, Project Manager

Janene M. Caywood, Project Archaeologist

9. D.E.I.S. CIRCULATION LIST

## FEDERAL

US Dept. of the Interior
National Park Service
PO Box 25287
Denver, CO 80225

US Dept of the Interior
Missouri River Basin
Denver Federal Center, R 688 B 67
Denver, CO 80225

US Dept. of the Interior
Water Resources Division
Drawer 10076
Helena, MT 59626

US Dept. of the Interior
Office of Surface Mining
Brooks Twrs, 1020 15th Street
Denver, CO 80202

US Dept. of Transportation
Federal Aviation Administration
FAA Building, Room 2
Helena, MT 59601

US Dept. of Transportation
Federal Highway Administration
Drawer 10056
Helena, MT 59626

US Dept. of Transportation
US Coast Guard
915 Second Avenue
Seattle, WA 98174

US Fish & Wildlife Service
Room 3035, Federal Building
316 North 26th Street
Billings, MT 59101

US Dept. of the Interior
Bureau of Reclamation
PO Box 2553
Billings, MT 59103

US Dept. of the Interior
Environmental Impact Assment Program
US Geological Survey MS760
Reston, VA 22092

US Dept of the Interior
Bureau of Mines
East 360 erd Avenue
Spokane, WA 99202

US Dept of the Interior
Bonneville Power Administration
PO Box 3621 - SJ
Portland, OR 97208

Federal Housing Administration
Housing & Urban Development
Drawer 10095
Helena, MT 59626

US Dept. of the Interior
Bureau of Land Management
PO Box 36800
Billings, MT 59103

Department of the Army
Omaha District Corp of Engineers
215 North 17th Street
Omaha, NE 68102

Environmental Protection Agency
Deputy Regional Administrator
Suite 900, 1960 Lincoln street
Denver, CO 80203

Emergency Management Agency
Regional VII, Denver Federal Cntr
Building 710
Denver, CO 80225

Helena Field Office
Drawer 10022
Helena, MT 59626

US Postmaster
Helena Post Office
Helena, MT 59601

## STATE

Dept. of Anthropology
University of Montana
Missoula, MT 59801

Dept. of Commerce
Aeronautics Division
Airport Road
Helena, MT 59620

Dept. of Fish, Wildlife & Parks
Parks Division
1420 East Sixth
Helena, MT 59620

Dept. of Health and
Environmental Sciences
Air Quality Bureau
Cogswell Building
Helena, MT 59620

Dept. of Natural Resources
and Conservation
32 South Ewing
Helena, MT 59620

Environmental Quality Council
Capitol Post Office
Box 215
Helena, MT 59620

Montana Historical Society
State Historic Preservation Ofcr.
225 North Roberts Street
Helena, MT 59620

Montana State University
Institute of Applied Research
Bozeman, MT 59715

State Soil Conservation Service
10 East Babcock Street
Bozeman, MT 59715

Dept. of Commerce
Admin. Transportation Division
1424 Ninth Avenue
Helena, MT 59620

Dept. of Fish, Wildlife & Parks
Fisheries Division
1420 East Sixth
Helena, MT 59620

Dept. of Health and Environmental
Sciences
Water Quality Bureau
Cogswell Building
Helena, MT 59620

Dept. of State Lands
Office of the Director
1625 11th Avenue
Helena, MT 59620

Montana Dept. of Education
Montana State Library
1515 East 6th Avenue
Helena, MT 59620

Montana State University
Dr. Les Davis
Dept. of Anthropology
Bozeman, MT 59715

State Clearinghouse
Agnes Zipperian
Capitol Annex
Helena, MT 59620

## LOCAL

Helena Chamber of Commerce
201 East Lyndale
Helena, MT 59601

Honorable Rus Ritter, Mayor
City of Helena
316 North Park
Helena, MT 59624

Elementary & HS District #1
PO Box 5417
Helena, MT 59604

Floodplain Administrator
Lewis & Clark County
201 S. Last Chance Gulch
Helena, MT 59620

## LOCAL (Cont'd)

L & C County Commissioners
L & C County Courthouse
Helena, MT 59624

L & C Areawide Planning Org.
Box 1725
Helena, MT 59624

Lewis & Clark County
Extension Office
PO Box 855
Helena, MT 59601

Mervin H. Finstad, Principal
Smith School
2320 5th Avenue
Helena, MT 59601

## PRIVATE ORGANIZATIONS

Montana Power Company
40 East Park
Butte, MT 59701

Jerry Wright
Independent Record
317 Allen
Helena, MT 59601

Dennis Crawford
1812 Gold Rush Avenue
Helena, MT 59601

Diane & Jon Krutar
1621 Broadway
Helena, MT 59601

James W. Kehr, D.D.S.
1721 Virginia Dale
Helena, MT 59601

Dave Kneedler
705 Rhode Island
Helena, MT 59601

Joe Beason
2500 South Ridge Drive
Helena, MT 59601

Morris Brusett
761 South California
Helena, MT 59601

Phil Kleiv
807 Saddle Drive
Helena, MT 59601

Paul Gruel
1823 Broadway
Helena, MT 59601

John Anthony Smith
2230 Broadway
Helena, MT 59601

Chuck and Mary Matule
1930 Beltview Drive
Helena, MT 59601

Jim Summers
1511 Winne
Helena, MT 59601

Jim Kennedy
1106 North Washington
Helena, MT 59601

Mike & Pat Lopach
2012 Broadway
Helena, MT 59601

Lyle Eggum
1615 Winne
Helena, MT 59601

Don Copley
2024 Broadway
Helena, MT 59601

Jim Christnacht
1517 Jerome Place
Helena, MT 59601

Tim Kearney
425 Broadway #4
Helena, MT 59601

Don & Mary Kincade
2001 Prospect Avenue
Helena, MT 59601

## PRIVATE ORGANIZATIONS (Cont.)

Bob Murdo
203 North Ewing
Helena, MT 59601

Pat LaSalle
PO Box 4688
Helena, MT 59601

Tom Williams
#16 East Granite
Butte, MT 59701

Kathy Gerl
700 Red Letter Street
Helena, MT 59601

J. Padbury
721 None Such
Helena, MT 59601

Trinka Michalson
425 Pine
Helena, MT 59601

Bill Spivey
1811 Winne
Helena, MT 59601

Sandee Sletta
400 South Graham
Helena, MT 59601

The Wilderness Society
Attn: Bill Cunningham
PO Box 1184
Helena, MT 59624

Rosanna Winterburn
929 7th Avenue
Helena, MT 59601

Mountain Bell Telephone Co.
Attn: State Supervisor
PO Box 1716
Helena, MT 59601

Art Hutchinson
1909 Lockey
Helena, MT 59601

American Wilderness Alliance
C. R. Merritt
7600 E. Arapaho, Ste 114
Englewood, CO 80112

Burlington Northern Railroad
Timber & Land Management
700 south Avenue West
Missoula, MT 59801

Montana Automobile Association
PO Box 4129
Helena, MT 59604

Montana Motor Carriers Assn.
PO Box 1714
Helena, MT 59624

Montana Stockgrowers Assn.
Office of the Secretary
PO Box 1679
Helena, MT 59624

Richard Graetz
PO Box 5630
Helena, MT 59604

Sierra Club
Upper Missouri Group
PO Box 515
Helena, MT 59624

Harriet Meloy
1317 9th Avenue
Helena, MT 59601

The Diehl Company
2021 11th Avenue, Ste. 11
Helena, MT 59601

Century 21 Heritage Realty, Inc.
1744 North Montana Avenue
Helena, MT 59601

Wheel Estates Trailer Court
Gerald Olson
3283 Hwy 12 East
Helena, MT 59601

Brian & Mary McCullough
2537 South Ridge
Helena, MT 59601

## PRIVATE ORGANIZATIONS (Cont.)

Vern Sitter
2301 Colonial Drive
Helena, MT 59601

Chris Tweeten
1029 Monroe
Helena, MT 59601

Chuck Matule
1930 Beltview Drive Box 315
Helena, MT 59601

Rosana Winterburn, President
Board of Trustees
St. Peters Community Hospital
2475 Broadway
Helena, MT 59601

Ted Otis
430 South Fee Street
Helena, MT 59601

Harvey Berg
109 Briar Wood
Helena, MT 59601

Douglas C. Stange, Ph.D.
Box 315
Helena, MT 59624

League of Women Voters
1317 9th Avenue
Helena, MT 59601

Ken Arnold
Box 1262
Helena, MT 59624.FI C:BOOK.IDX

# I N D E X

A
access
  additional, 4, 10
  approval by FHWA, 2
  effect on land use, 15, 27
  improved, 77, 85
  limited, 4
  southeast Helena to U.S. Highway 12, 12
  streets, 17
accidents, 50, 87
adjustment
  power lines, 69
advertised
  meetings, 99
affected environment, 20
agency
  coordination.IB, 99
agriculture, 16, 51, 87
air pollution standards, 35
air quality, 14, 17, 33, 70
  construction, 97
Air Quality Bureau, Montana, 71
air quality monitoring sites, 34
air quality standards, 37
alternatives, 10
  meeting to discuss, 99
alternatives considered, 1
ambient air quality, 35
American Smelting and Refining Company, 33
annexation, 77, 80
archaeological sites, 15, 44, 80, 96
Areawide Planning Organization, 21, 32, 55
assessment plan, 92
attainment area, 35, 70

B
Beltview Drive, 4, 10, 14, 15, 16, 17, 75, 85, 86, 88
Belview Drive, 41
bicycle traffic, 86
bicyclist traffic, 50
bridge
  width, 11
Broadway Avenue, 2, 16, 30, 41, 43, 45, 47, 50, 65, 72, 73, 75, 81, 86
business location, 61

C
cable television, 32, 69
California Street, 2, 16, 30, 41, 65, 75, 81, 86
CALINE 3 dispersion model, 73
Capitol Hill Mall, 25, 26
Capitol Interchange, 1, 4, 10, 16, 85
carbon monoxide, 14, 33, 37, 70, 72
Cedar Street, 25
Central Business District, 25, 26

Chamber of Commerce
  Helena, 59
circulation list
  draft environmental impact statement, 103
City of Helena, 1, 2, 4
Clancy School District, 30
Colonial Drive, 1, 2, 10, 14, 16, 17, 27, 32, 41, 43, 47, 50, 56, 61
comments, 99
commercial land, 1, 7, 10, 13, 15, 18
competition, 60
Comprehensive Plan, 21, 27, 31, 43, 44
comprehensive planning, 43
connecting road
  Beltview Drive to U.S. Highway 12, 85
connecting streets, 2, 6
construction, 17, 97
  air quality, 87, 97
  borrow and waste areas, 88, 97
  costs, 91
  employement impacts, 54
  employment impact, 56
  housing, 61
  impacts, 87
  local income effects, 58
  major materials, 57
  noise, 87
  payroll, 57
  population impacts, 54
  social impacts, 62
  traffic, 97
  vehicle and pedestrian impacts, 88
Cooney Convalescent Home, 65
coordination, 99
  agency, 99
Corridor Study, Interstate 15, 4, 7
costs, 1, 18, 90
  administration, 18, 90
  construction, 18
  construction inspection, 90
  construction supervision, 90
  engineering, 18, 90
  funding sources, 91
  Montana Department of Highways, 18, 90
  responsibility, 18
  right-of-way, 91
  special improvement district, 18
county line
  Lewis and Clark, 20
Crossfire Master Plan, 43
cultural sites, 15, 44, 80, 96
Custer Avenue, 4

D
demographic characteristics, 29
description
  project, 1
description, project, 4

development
  commercial, 59
development plan
  Diehl Company, 78
  G.W. Padbury Property, 79
direct impact
  air quality, 70
dispersion meteorology, 33
displacement
  economic activities, 61
displacement effects, 66

E
eagles
  bald, 42
East Helena, 22, 35, 55
  City of, 20
  School District, 30
East Helena Overpass, 10, 12, 17, 90
economic
  impacts, 56
  impacts from construction, 56
economic impacts, 12
economic indicators, 25
economy, 22
  impacts on base, 59
  long term effects, 58
Elaine School, 41
Elaine Street, 16, 75, 89
electricity, 13, 32, 69
Eleventh Avenue, 2, 16, 20, 25, 43, 72, 73, 81, 85
emission sources, 35
employment
  historic, 23
  major employers, 25
  other contributing activities, 23
  state and federal government, 23
  unemployment rates, 24
employment impact
  construction, 56
energy, 17, 90
environmental consequences, 54
Euclid Avenue, 25
exavated material, 17

F
farmland, 51, 87
  prime, 16
  unique, 16
Federal Clean Air Act, 33
Federal Highway Administration, 1, 2, 18, 38
Fee Street, 73, 85
fill material, 17
fire protection, 31
flood hazard, 13, 32, 69
flood plain, 13, 32
flood plains, 70

frontage road, 88, 90
functional classification, 45
funding sources, 91
future traffic volumes, 81

G
gas, 13, 32, 69
growth
  commercial, 80
  residential, 80

H
Helena
  Citizens Council, 100
  High School, 31
  Middle School, 31
  school districts, 30, 31
  Transportation Coordinating Committee, 100
Helena
  school district, 69
Helena Transportation Plan, 1981 Update, 4, 7
historic sites, 15, 44, 80
Historical Research Associates, 44
historical sites, 96
history
  project, 4
housing
  characteristics, 27
  new, 29
  new dwelling units, 28
  total dwelling units, 27
housing impacts, 61
Hustad Center, 25

I
identification of issues, 99
incremental effects, 64
indirect impact
  air quality, 70
interchange
  additional, 4
  bridge, 10, 11
interchange bridge, 7
Interstate 15
  additional access, 4
  low use, 4, 7
  traffic increase, 16
irrigation, 16, 51, 87

J
Jefferson County, 20, 55, 56, 64
  school districts, 30

L
lakes, 36
Lamborn Street, 65, 81, 85
land
  commercial, 44
  development, 43
  ownership, 42
  planning, 42
  residential, 44
  use, 43, 58, 96
  use exchange, 59
land use, 30
  exchange, 77
  impacts, 77
  plans, 77
landuse, 15
letter of intent, 7, 99
Lewis and Clark County, 20
licenses, 2
list of preparers, 102
local income effects
  costruction, 58
Lundy Center, 25

M
Main Street, 25
Memorandum of Understading, 7
mitigation measures, 96
mobile home park, 43
Montana 24-hour standard, 36
Montana Avenue, 20, 25, 85
Montana City Interchange, 12
Montana Department of Health and Environmental Sciences, 33, 35
Montana Department of Highways, 1, 2, 4, 7, 17, 18
Montana Power, 32
Montana State Historic Preservation Office, 80
Mountain Bell, 32

N
National Historic Preservation Act, 80
natural gas, 32
natural resources, 14, 76, 96
  vegetation, 42
  wildlife, 42
need, 7
No-Build Alternative, 1, 10, 12, 13, 13, 15, 17, 18
noise, 14, 30, 36, 74
  abatement criteria, 38, 39
  construction impacts, 76
  measurements, 38
  predicted levels, 74, 75
  prediction model, 38
  present levels, 41
  residential impacts, 75
  test locations, 40
Noise Prediction Model, 38
non-attainment area, 35

Northgate Plaza Shopping Center, 25

O
Oakes Street, 16, 65

P
pedestrian, 7
pedestrian traffic, 50, 86, 96
permits, 2
police protection, 31
population
  change, 21
  characteristics, 20
  distributation, 56
  forecasts, 54, 55
  impacts, 54
  long-term impacts, 54
  trends, 20
population impacts, 12
preferred alternative, 1, 18
preliminary findings
  meeting to discuss, 99
private service characteristics, 30
private service impacts, 68
project construction, 1
project description, 1
projections
  2006, with interchange, 83
  2006 without interchange, 82
property owners, 1, 2, 7, 10, 15, 18
property tax, 13, 30, 67
property values, 2, 13, 30, 66
Prospect Avenue, 2, 16, 25, 85
public involvement, 7, 18
public scoping meeting, 99
public service characteristics, 30
public service impacts, 68
public utilities, 13, 32, 69
purpose, 7

R
ramps, 10, 11
related streets, 17, 88
relocations, 14, 32, 70
residential areas, streets, 2, 13, 14, 15
residential development, 2, 13, 15, 17
retail sales
  projected, 61
retail trade characteristics, 26
right-of-way, 1, 80, 91
runoff, 32, 69

S
Saddle Drive, 15, 16, 31, 43, 65
safety
  traffic, 81, 86, 96
Sanders Street, 65

schools, 31
  historic enrollment, 31
scoping, 99
scoping meetings, 7, 10, 18
service industry characteristics, 26
sewer, 13, 32, 69
shopping center, 4
Smith Elementary School, 31
Smith School, 41, 50, 75, 86
SNAP
  noise prediction model, 74
social characteristics, 29
social impacts, 2, 62
  long term, 62
socioeconomic baseline characteristics, 20
socioeconomic impacts, 54
South Hills Planning Study, 32, 43, 69, 70
special improvement district, 1, 2, 7, 10, 13, 18, 59, 67, 90, 91
  assessment plan, 92
St. Peter's Community Hospital, 7, 27, 31, 36, 65
State Implementation Plan, 14, 71
storm drainage, 13, 32, 69
streams, 36
study area, 20

T
tax base, 67
  characteristics, 30
telephone, 13, 32, 69
total suspended particulates, 14, 33, 37, 70, 71
traffic, 45
  accidents, 50
  bicyclist, 50
  composition, 47
  congestion, 4
  construction, 97
  counts, 45
  decrease, 2, 7, 16, 85
  existing, 45, 47
  flow, 4
  future volumes, 81
  growth, 45
  hourly variations, 47
  impact on property values, 13
  increase, 2, 15, 17, 30
  model, 81
  monthly variation, 45
  net effects of interchange, 84
  patterns, 2
  pedestrian, 12, 50, 96
  projections, 10, 16, 81
  safety, 50, 81, 86, 96
  signals, 10
TSP standard
  federal, 72
  Montana, 72
typical sections, 11

U
U.S. Fish and Wildlife Service, 42
U.S. Highway 12, 2, 7, 12, 14, 16, 17, 89
U.S. Soil Conservation Service, 51

V
vegetation, 76, 96
vehicle exhaust, 72
visual
  affected environment, 42
  impacts, 76
visual impacts, 14, 30

W
water, 13, 69
  distribution, 32
  storage, 32, 69
water quality, 14, 36, 74
wetlands, 13, 32, 70
wildlife, 14, 76, 96
Winne Avenue, 41, 43, 65, 75, 81, 86
wood burning, 72

Z
zoning, 44